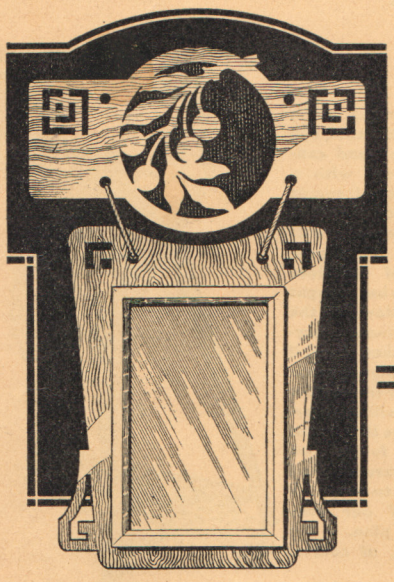
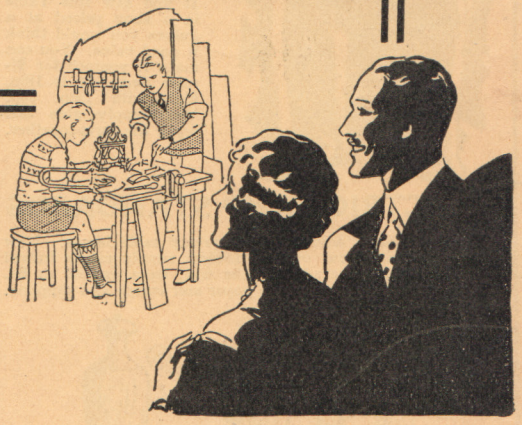
Hobbies WEEKLY



FRETWORK
CHEMISTRY
SWIMMING
WOODWORK
MODEL BOAT
PHOTOGRAPHY



Free Design for
HANGING
POSTCARD
FRAME

2D

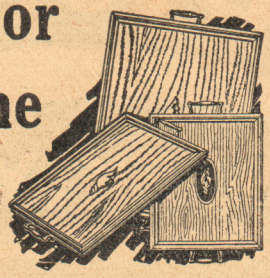
June 6th. 1936

Vol. 82. No. 2120

THE FRETWORKER'S AND HOME CRAFTSMAN'S JOURNAL

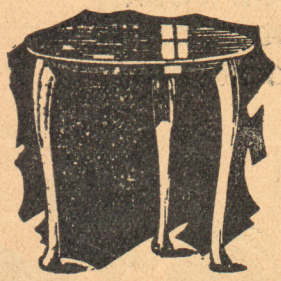
It Pays to Make Things for the Home

Cheap, ready-made furniture—built to a price—can never give the service and satisfaction that you get from a thing you have made yourself from Hobbies materials. You save in every way when you make your own.



TRAY PARCELS

Containing baseboard, moulding, handles and transfer. In three sizes: 14½ by 11½ins., 2/3; 19 by 11½ins., 2/6; 20 by 15ins. 2/9. Postage 6d. on each.

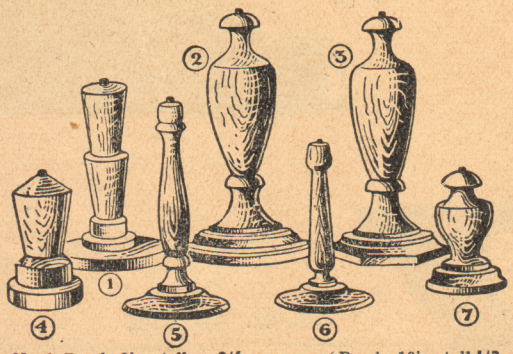


COFFEE TABLE

If you saw this Table in a shop priced at a guinea you would think it good value. You can make it yourself for 9/- (carr fwd.) It is 18in. high with 18in. top. You simply glue and screw the parts together.

ELECTRIC LAMP STANDARDS

You have often admired those pretty table lamps. Now you can make your own! Hobbies supply nicely turned standards drilled ready for the flex, from as low as 9d. Wire Frame for shade, shade paper and switch also supplied.



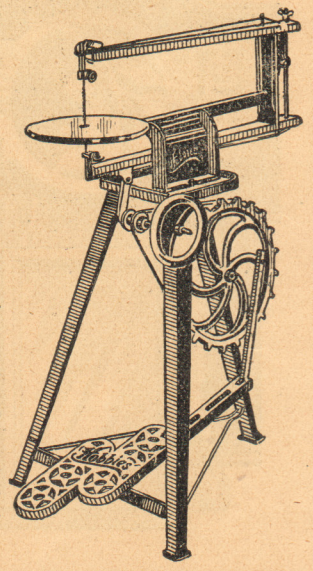
No. 1. Beech, 9ins. tall 2/6
No. 2. Beech, 10¾ins. tall 2/6
No. 3. Oak (weighted base) 10¾ins. tall 3/3
No. 4. Beech, 6ins. tall 2/6
No. 5 { Beech, 10ins. tall 1/3 / Oak, 10ins. tall 1/-
No. 6. Beech, 8ins. tall 9d.
No. 7. Beech, 5½ins. tall 1/9

Postage is extra to all prices

Hobbies Ltd., Dereham and Branches

You need a FRETMACHINE for Output and Profit!

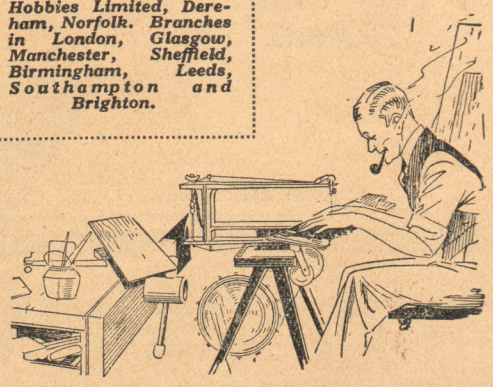
A Handframe is a mighty useful tool, but it does not—and cannot—compare with a machine when it comes to a question of output with consequent greater profit. Mass production of machines by Hobbies has brought the price down to the level of almost everybody's pocket. Even if making a bigger profit is not your immediate need you will be interested in the illustrated machine folder we have prepared. Send for a copy to-day, with details of our easy payment plan. No obligation, of course.

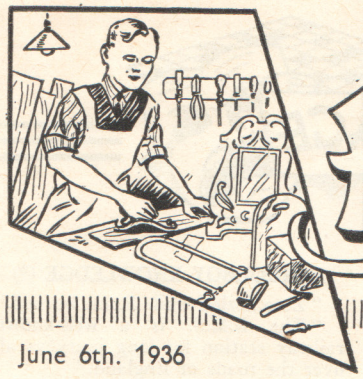


The AI Machine, 45/-

Carr. Fwd.

Hobbies Limited, Dereham, Norfolk. Branches in London, Glasgow, Manchester, Sheffield, Birmingham, Leeds, Southampton and Brighton.





Hobbies WEEKLY

June 6th. 1936

Vol. 82. No. 2120

The Editor's Notes

I KNOW readers will be quite delighted with the article in this issue on the making of a model River Cabin Cruiser. As can be seen in the photographs the author made a very sound job of it, and his description will provide other fellows with the same chance. Apart from the hull, there are all the usual little gadgets such as hand-rails, steering wheel, anchors, chains, etc. whilst the model can be lighted in its cabin by tiny bulbs led from a battery. Moreover the model is fitted with an engine which drives it steadily along on any calm water.

ANOTHER model aeroplane is coming along in next week's issue and this time it is a large and practical Low-Wing Monoplane which has put up an excellent flight for the maker. Complete full size patterns will be printed on a large design sheet so there will be no need to work up from scale drawings. In addition I am arranging to have all the material obtainable in a complete kit of parts. There will, of course, be full instructions for assembly and flying.

WHEN the "Queen Mary" sailed on her maiden cross Atlantic voyage last week her Captain was presented with a 10ft. model of the boat made in flowers. In that massive and beautiful tribute the masts were actually pieces of Hobbies dowelling supplied to the floral decorators. We must wonder how many other pieces of our material went on the same voyage!

TALKING of the "QueenMary" reminds me again of our model—and I am wondering how many have been shown in shop windows, in exhibitions, or in private houses during the past month or so. An interesting note comes, by the way, from N. Nierris of Heaton Road, Newcastle-on-Tyne. He fitted his ship into a glass showcase with reflex angle mirrors to give both back and front view. The case, too, prevented dust falling on the model, and naturally made the whole thing look more imposing. The material used in the case was 4 pieces 3ft. long of corner moulding, 2 pieces of $\frac{1}{8}$in. plywood 10$\frac{1}{2}$ins. by 7$\frac{1}{2}$ins. for the ends, 2 pieces of 15oz. glass 34ins. by 9ins. (sides) and 2 pieces 34ins. by 6ins. (top). The two mirrors were each 9ins. by 6ins. and the whole lot cost under 5/-. A very good suggestion.

HERE is an addition to the series of quaint collections which form the hobbies of different people. George L. Goodman of Westcliff-on-Sea has nearly 200 fans which he has gathered at various times and from various places. Most of them were bought in the bazaars of India, China and Japan, and he has paid up to £20 for a single specimen.

Mr. Goodman's fascination for fans is shared by the Queen. She recently expressed a desire to see one of his fans made by a late eighteenth century artist, and found that her own collection included an exact replica by the same artist.

THE list of queer collections must surely be without end. There is a lady in America, you know, who has a collection of 18,000 buttons, and I wonder if she could spare two or three for our office boy, George because he has a habit of eternally "hitching" up his trousers. Of course, the cigarette card collection is very popular but one man, I hear, has more than a million and another over 600,000.

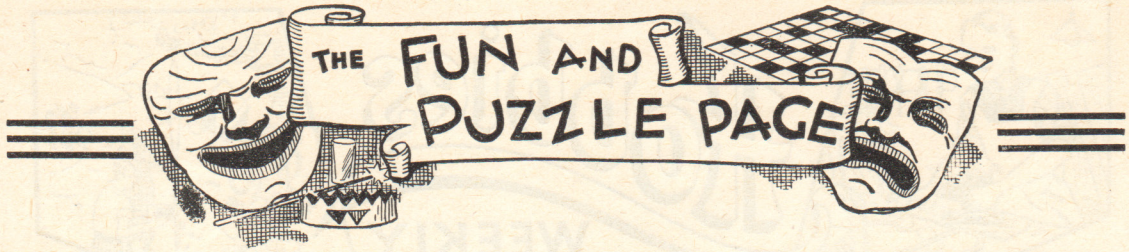
CONTENTS

DESIGN CHART—Hanging Postcard Frame

Fun and Puzzle Page	226
Hanging Postcard Frame	227
Electric Model Cabin Cruiser	228
Concrete Bird Bath	231
How to make Gaslight Prints	233
Postcard Frame Patterns	236
Home Chemistry	239
Swimming	241
Scout Notes	242
Bed Table and Tray	243
Self-Filling Bird Hopper	244
Flying Model Monoplane (Concluded)	245
Sleeve Board for Ironing	246

Next Week's Design—Model Flying Aeroplane

Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. will be found on cover iii.



Men are paid big salaries for assuming big responsibilities.

There are substitutes for almost everything—except work and sleep.

The sweaty players in the game of life always have more fun than the supercilious spectators.

* * * *

Motor Salesman, to complete novice "This is the fan, and this is the radiator."

"Ah! That means, of course, that it is an all-weather model."

* * * *

JUST HAPPENED.

A man walking along the banks of a canal found another struggling in the water. After helping him out he inquired:

"How did you come to fall in?"

"I didn't come to fall in," was the reply, "I came to fish."

STICK IT!

Tie a ring to the end of a piece of string and hang it from the branch of a tree. Give one of your pals a stick and blindfold one of his eyes. Now tell him to push the end of the stick through the ring. You will get a good laugh at his attempts to do so.

* * * *

BE QUICK!

This one often puzzles a fellow. Ask him to answer smartly this sum—"What is twice the half of 17s. 4½d.

The answer, of course, is 17s. 4½d."

* * * *

What kind of tables do we cook and eat?

Vegetables.

When does a caterpillar grow good?

When he turns over a new leaf.

When is a rock not a rock?

When it's a shamrock.

Why is a baker a silly fellow?

Because he sells what he needs (breads)

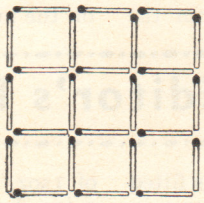
When does the sea recognise you?

When it waves in your direction.

MATCH TRICKS

Twenty four matchsticks are arranged in the form of nine squares as shown in the sketch. Now try to leave only two squares on the table by taking away eight matchsticks and without disturbing the remaining sixteen.

Another trick with the same squares is to remove four matchsticks only



and leave five complete squares on the table, each of them the same size as the original squares. No matchsticks may be touched other than the four that are taken away. The two methods are in Col. 3, but try your hand at it first.

* * * *

TRY THIS ONE.

A man buys a pair of shoes for 16/-. He hands over a £1 note. The shoemaker has no change and so gets change from the butcher. Half-an-hour later, the butcher returns and says that the note is a dud one. The shoemaker gives him a good £1 in exchange. How much does the shoemaker lose?

When you have worked out the answer, turn to the third column and see if it is correct.

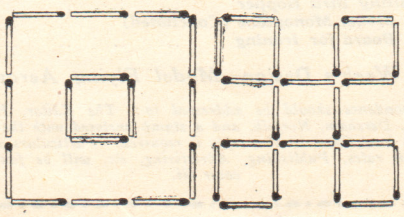
* * * *

When is a boxer's eye like a barrel?

When it is bunged up.

Why is a sheet of postage stamps like a distant relative?

They are only slightly connected.



SCHOOLBOY KNOWLEDGE (?)

"Zero fizzled while Rome burned."

"The L.M.S. is a well-known railway station for long journeys all over the roads of England."

"The pygmies of the forest are very small, so small that you can hardly see them. In Japan they ride in Jigsaws."

"Agincourt and Crecy had a fight and Agincourt won."

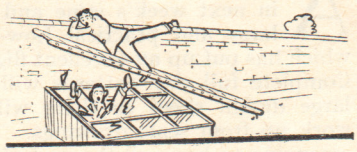
"The Scottish Highlands are covered with gauze."

"Taj Mahal is a very rich Indian woman now in England."

* * * *

"What's happened? Have you had an accident?"

"No. I just bet Joe he couldn't carry me up a ladder on his back, and I won."



A GOOD THING!

Father: "There's no need for you to grumble. Why when I was your age I was carrying bricks and mortar."

Son: "Yes, dad, I'm really very proud of you—if it hadn't been for you I should be doing the same."

* * * *

What can be light and also dark?

A piece of coal.

* * * *

SOLUTIONS.

The answer to the problem about the shoes is that the shoemaker lost 8/- and a pair of shoes.

The solution to the match trick is that two matchsticks are taken away from each of the inner four corners, leaving two squares only, one inside the other, as shown. The solution to the second problem is that the outside centre matchsticks on each of the four sides are removed, when it will be found that only five squares of equal size remain, as shown on left.

FRETWORK

A HANGING POSTCARD FRAME

THE patterns shown on the centre pages of this issue provide for the making of a distinctly uncommon piece of work which will undoubtedly appeal to many. Not only is it suitable for those who have been doing fretwork for a number of years, but it is also particularly appropriate for beginners who would like to make something useful yet which does not involve a great deal of work.

As can be seen, the Hanging Frame is composed of two pieces, so very little wood is required. Indeed, the special parcel supplied by Hobbies costs only 7d. The whole of it can be cut in almost any ordinary fretwood, but in the parcel mentioned, whitewood is supplied for the strip frame round the glass where it will be found all in one piece. Notice, too, that the grain runs in two directions to add further to the distinctiveness.

Direction of Grain

In the actual frame the grain of the wood runs up and down. In the fancy piece at the top it runs across.

The work is quite straightforward, and the patterns can be cut from the book and pasted direct to 3/16in. pieces of wood. The cutting involves straight lines for the geometrical design in the top and the curves of the leaf and berry feature in the circle.

There are four ¼in. diameter holes in the top portion, and two in the actual frame. If possible cut these with a brace and bit to get a sharp, true circle. Cut out the small interior frets of the frame before taking out the opening for the glass.

The Glass Holder

This large rectangle, too, can also be used as the backing. For that reason the drill hole should be made in one corner and the piece kept when it is cut out so it can be used again later. The four simple strips are glued to the front round the edge of the opening, and should fit neatly at the corners with a mitre of 45 degrees. They overlap about ⅛in. all the way round—just enough to hold the glass in place.

Notice, too, that the inner edge of these is chamfered. This can be done with the small fretwork plane if the strips are screwed up in a vice and the plane run carefully along at the required angle. Be sure to glue them in position firmly to prevent the glass falling out through the front.

Both the parts should be thoroughly cleaned up with glasspaper, using a fine grade at the last to prevent the surface being scratched.

To make a more striking effect, the circle at the top should be backed up with some form of material. A piece of linen cloth is supplied by Hobbies which is suitable for this, and its colour makes the leaf and berry feature stand out very strongly. Or you can add a piece of silver paper of bright pattern, cover paper from, say, a chocolate box.

Fancy Cords

The two articles are hung together by means of thick fancy cord which is obtainable from a stationer or furnisher quite cheaply. Or thick soft string can be used dyed to any particular colour you wish. Have the cord in one length, knot it behind the hole in the top, carrying it through the front and down to the frame. Thread it through to the back and carry across to the opposite hole in the frame.

From there it comes through to the front and passes up again to the top portion, where it is once more knotted behind when you have got the correct length. The actual distance between the two is about ¼in to ⅜in.

Placing Glass and Picture

The glass (one of Hobbies No. 5802) is put in behind the rebate strips, with the actual picture behind that. The backing piece of wood is returned to its original position, and the whole thing held in place by pasting over a piece of brown paper. To make this quite tight, damp the paper very slightly, apply the paste round the edge of the frame, then put the paper on. When it dries it will have shrunk and become drum tight.

Another method of holding is to use half a dozen little photo clips, but in this case the edges of the backing board should be chamfered and the clips bent slightly backwards accordingly.

MATERIALS SUPPLIED

For making this Frame we supply a parcel of Mahogany and Whitewood for 7d., post free 10d. A piece of Glass (No. 5802) and piece of linen cloth for 4d., post free 6d.

Postage on wood and fittings if sent together, 4d. only.

AN ELECTRIC MODEL CABIN CRUISER

EXPERIENCE goes to prove that it is a little difficult to keep a model to scale, and yet retain in the model good working qualities. The smaller the scale the more difficult this is, therefore possibly the best scale for a working model cabin cruiser is ½in. to the foot.

A prototype of 80ft. long, with a breadth of 14ft., and depth of 10ft. scaled down gives a model 3ft. 4ins. long, breadth 7ins. and depth 5ins. This allows a good amount of detail, and there is reasonable room in the hull for batteries and motors, etc.

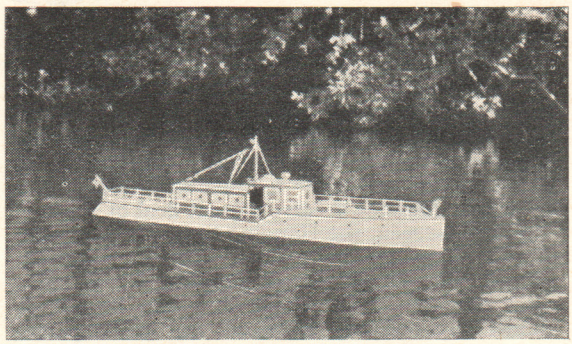
Commencing with the actual construction the hull was roughly cut to shape from a piece of yellow pine, the block being marked off as shown in Fig. 1. As it is desirable to prevent splitting the hull, it is advantageous to bore out as much of the interior with a brace and large bit before shaping the bow or stern.

While doing this great care has to be exercised, else the bit will penetrate the bottom of the hull. A gouge and fish-tail chisel will finish out the interior carving ; the outside is formed with a plane, and spokeshave. When finished it should be about ⅜in. thick all round, which can be measured with a large pair of calipers. Glasspapering and a priming coat of paint complete the hull.

Propeller and Shafting

The propeller shaft and stern tube are now made. The latter is made from the inner portion of a cycle tyre inflator, and the shaft from a motor bicycle wheel spoke. At either end of the tube old terminal tops were soldered in, bored out and the shaft ground into position with valve grinding paste to ensure good bearings (see Fig. 2).

For the propeller, it is cheaper and quicker to buy a casting (a 2½in. two-blade Bassett-Lowke) files, old pocket knife, and emery cloth, being used to finish it off.



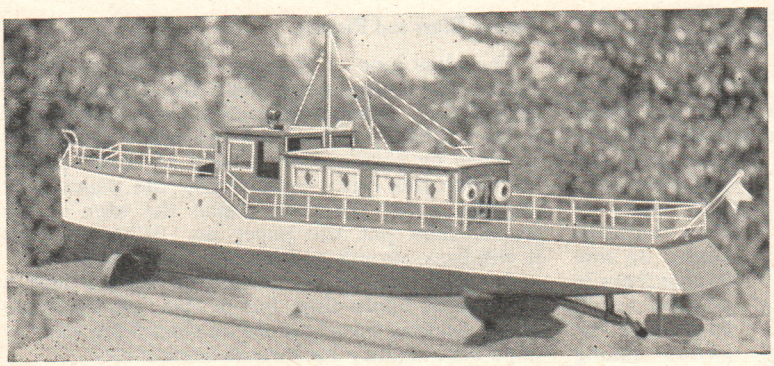
The model under power on the water

The boring of the propeller boss to take the shaft can be done on a lathe. To make certain of a secure attachment to the shaft, the propeller is bored together with the shaft i.e. transversely, and a copper pin riveted through (see Fig. 2).

For a water excluder and to act as lubricant, the tube was packed with melted vaseline. The length of the tube and shaft are, of course, determined by the position of the motor in the hull. With the 8-10 volt Bassett-Lowke power plant used, the small flexible coupling of the type illustrated in Fig. 2 is quite satisfactory, two " Meccano " collars being used to pinch the small brass driver to the shaft, the driving cogs or pins being made from knitting needles, soldered into the brass strip.

Fitting the Stern Tube

The fitting of the stern tube into the hull requires patience, and careful calculations to ensure the right position, and angle of the tube to the motor. It is a great help to have a friend holding the hull, while the drilling is in progress, the assistant keeping an eye on the angle of the drill, and the driller watching the centre line.



For any enlargements on the hole which have to be made, a red hot poker is most useful. This seems a rather crude procedure, but there is little fear of a split with this method.

Plastic Wood makes an excellent bedding for the tube and it also fills any space where the tube penetrates the hull at the stern. To eliminate vibration, the electric motor was mounted on rubber pads cut from an old inner tube of a tyre.

At this stage the port-holes are drilled out. The large size (i.e. $\frac{1}{2}$in.) wireless condenser spacing washers make quite good substitutes for frames. Old photographic film painted blue was inserted behind the brass washer and dental cement used to hold the washers in place.

The Rudder

The rudder (see Fig. 3) is made from a piece of sheet brass, the aft edge tapered down with files and emery cloth. This is riveted at points "R" (see sketch) to a piece of 2.B.A. brass rod, the thread having been previously filed off. A small collar is soldered to the post at point "A."

The stern tube is a piece of $\frac{1}{4}$in. copper tubing cemented into the hull with dental cement. In practise this rudder actually worked from the wheel in the bridge. It was found however that it was impossible to get a hand into the bridge to steer. So making the steering practicable, the small brass tiller was connected to silk fishing line taken below the deck (Fig. 4). Two small compensating springs are fixed to either end of the line, the other portion of line just passing over the rack of the wheel. This method enables the model to be steered from the tiller.

The cabins and engine room skylight were made from thin fretwood, small seats and a table being also fitted in as shown on plan and section in Fig. 4.

The steering wheel was an old wheel from an alarm clock with engine room telegraph and compass made from wireless terminal parts, crystal detector cup, and sections of $\frac{1}{4}$in. copper tubing. The handle on the engine room telegraph was the regulator lever from a watch.

The decks were made from a piece of $\frac{3}{8}$in. teak graded, and the boarding represented by 3/16in. sections cut with a knife, and filled with indian ink. The space for the cabins, and engine room hatch cut out.

The Wiring

At this stage the former is screwed to the side of the deck, and a small flange of wood fitted round the hatch. Before fixing down the decks the wiring circuits for the motor and lights are carried out. The wire used for the lights was No. 22 gauge silk covered. Light flex being used for the motor circuit, the switch for this is a small push and pull type, and is placed inside the wheel house (see Fig. 4).

The lighting switch is made from a small brass bar connecting two screws (Fig. 6) and placed on the under side of the roof covering the wheel house. It is easily flicked off and on with the finger.

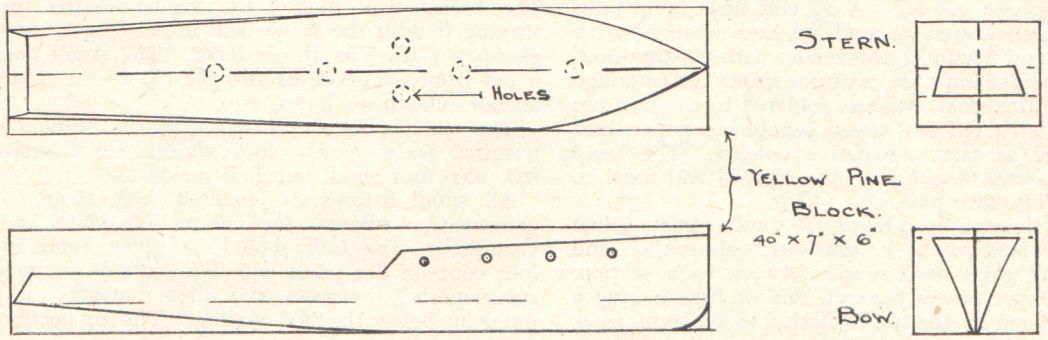


Fig. 1—An elevation with bow and stern view for shaping the hull

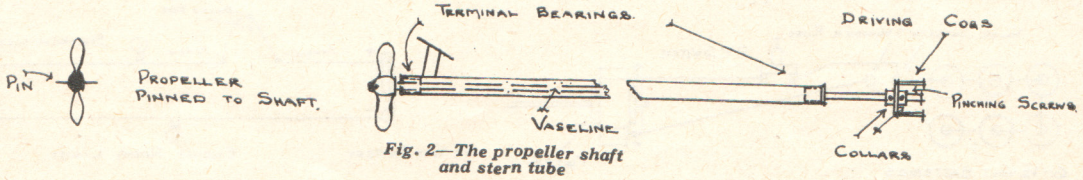


Fig. 2—The propeller shaft and stern tube

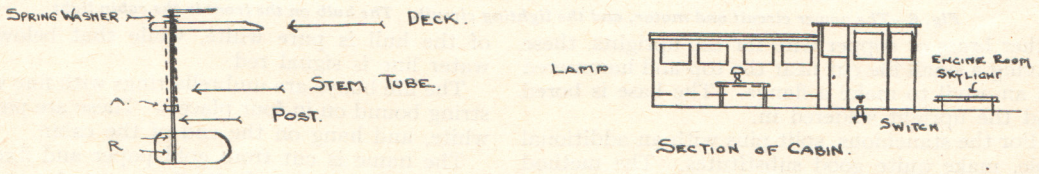


Fig. 3—How the rudder is fitted up

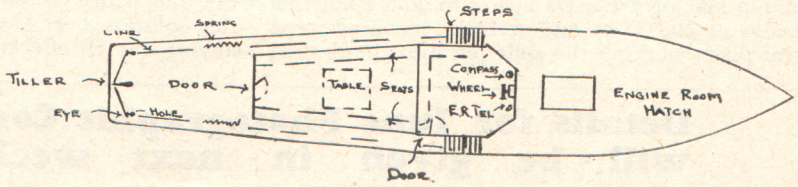


Fig. 4—(top right and right) —A side view of deck cabins and plan of the deck

The batteries for the lighting and power circuits are 4½ volt and (8-10 volt, 1½ unit connected) respectively. A small rack situated beneath the engine room skylight carries these.

The various deck fittings (Fig. 5) were made up from scrap. The window frames are cut from cardboard the thickness of a post card coated with white cellulose paint, and old negative fixed to the back to make excellent imitation

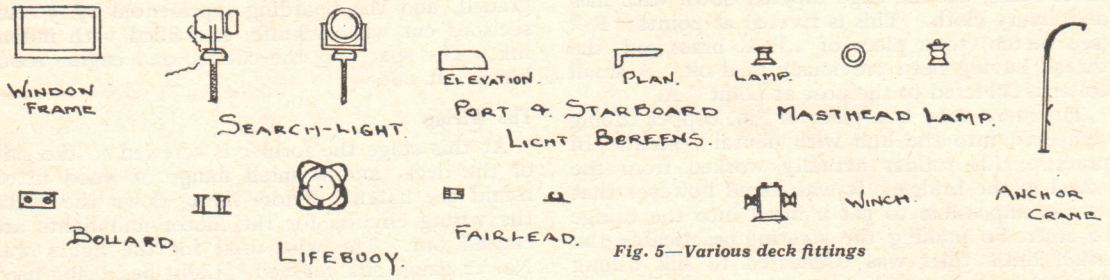


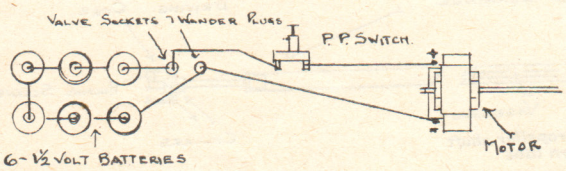
Fig. 5—Various deck fittings

glass. The whole window is then fixed to the cabin with " Durofix."

The searchlight was made from the flex holder portion of an electric light adapter i.e. the part in which there are two small wood wedges. This is bored and a wire bracket fitted and soldered to the bottom half of a terminal, the top thread having been cut off. A 1½ volt flash lamp bulb has wire soldered on, and the bulb wrapped with paper and fixed into this holder with plastic wood.

The side lamps are cut from empty .22 cartridge cases, with small washers soldered to the bottom, fitted with red and green cellaphane paper, and painted in their respective colours. The lamp screens can be cut from tin, shaped and fixed to the cabin with pins.

For the masthead lamp,two small cuts are taken from a lead pencil, bevelled with glasspaper, and a small glass bead glued between each section. A thin pin passes through the lot, this having a small bend on the top for fixing to the lamp rope. The wood portions of this lamp are painted black. For the bollards use sheet copper for the base, and



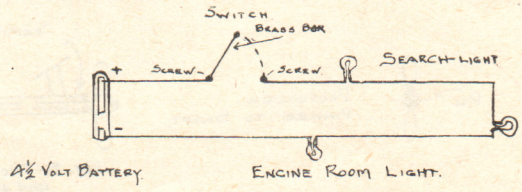


Fig. 6—The power circuit and motor, and the lighting circuit. The bulb on the front is the cabin light

either brass or copper wire for the uprights, these having a small file cut near the top and hammered on an anvil to make a flange. The base is bored and the upright soldered in.

For the stanchions, split pins with an additional hole, make quite good substitutes. The method used in making the extra hole is to hold a knitting needle in the vice, and a little encouragement with pliers working the split pin into the desired shape. When finished these are fixed into the deck at intervals of 2ins. A little " Durofix " at the base helps to keep these secure.

For hand ropes fishing line is used, fixed to the deck with four small swivels.

The anchor crane is made from a knitting needle bent to shape, and a small piece of wire soldered on for a cleat. For a fairlead a small section of ¼in. copper tubing is cut and slightly flattened, then cut across in two places, and the corners rounded off with a file. This is then soldered to a copper base similar to that of a bollard, only smaller.

Tapering the Mast

The mast is cut from mahogany, and tapered. The breast drill makes an excellent lathe for turning it with the wood held in the chuck, and glasspaper used as the reducer. The small cap is cut from boxwood, as also the blocks for crane anchor, masthead lamp, etc.

The winch is made up from a large old-fashioned terminal body, alarm clock wheels, small brass rod, also four small terminal heads.

All small fittings are painted with their representative colours, the cabins left plain and varnished. The hull should be given three or four coats of flat paint and two coats of enamel, glasspapering between the first coatings and pumicing before the final coating. The top portion of the hull is pure white, while that below the water line is signal red.

The life buoys are umbrella rings with fine white string bound on in four places. These are painted white, and hang on the end of the cabin.

The name is cut from gold paper and fixed to the hull with " Durofix," when set. A smear of this solution over the letters prevents the water having any ill effects on the name.

Details for June Photographic Competition will be given in next week's issue

A CONCRETE BIRD BATH

A BIRD bath is not only welcome to feathered friends but an attractive piece of garden furniture, providing a finished effect to a small lawn. The pattern illustrated is built of concrete and is cheap and easy to make.

A dustbin lid of the corrugated iron pattern provides a mould for the bath portion, the completed mould ready for the final shaping being shown in Fig. 1.

The Framework

Support the lid on a wooden frame first, and take care that the rim of the lid is not bent inwards at all or difficulty will be experienced in getting it off afterwards. Exactly in the centre of the lid place a short piece of ½in. dowel rod, fixing it truly upright by a little putty as shown, the mound of putty not being more than 1in. high.

Grease the lid and fill to a depth of 1½ins. with concrete. See the rod is upright, then leave the concrete to set for a few days. As concrete work is a job you cannot hurry, while one part is setting take the opportunity of getting along with another.

The Concrete

Now as regards the concrete. This is a one-two, three mixture. That is one part of Portland cement, two parts of sand and three parts of coarse material, called aggregate. The aggregate can be crushed clinker or brick, gravel with the large stones removed, stone dust or marble chippings—whichever is most easily obtainable in the district.

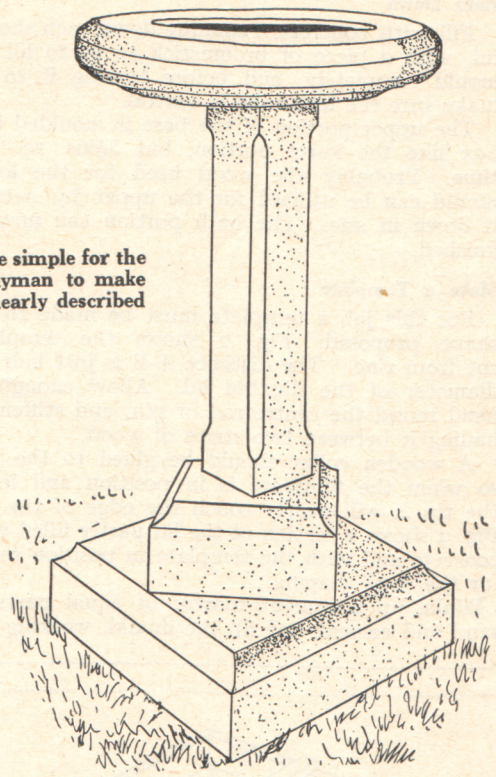
An old board does for mixing and a frame, measuring say 6ins. sq. and 4ins. deep for measuring the quantities. Lay the frame on the mixing board and fill level with cement. Lift the frame, leaving the cement on the board, and fill twice again with the sand, then mix well together.

Mix Well

Add three frame fulls of aggregate and again mix. Water with a watering can and turn over until the whole is wet all through but not sloppy. When of the right consistency it will slide off the spade easily.

The mould for the lower part of the base is shown at Fig. 3, as just a wooden box. In the angles nail 1in. quarter round moulding (Fig. 4), and in the centre bore a ½in. hole and stick a piece of ½in. dowel rod upright therein.

A strip of wood across the top will keep the rod vertical while the concrete is being rammed in.



Quite simple for the handyman to make as clearly described

The concrete should be well tamped in the corners, and made level at the top by drawing a straight edge across. While this is setting, the mould for the pillar can be made.

The Pillar Mould

This is shown at Fig. 5, and is a box-like tube with an inside measurement of 4ins. In the bottom of the tube bore a ⅜in. hole, and in the inside angles nail lengths of ¾in. triangular fillets to form the chamfers. These fillets do not extend the whole length of the mould but are cut 2ins. short of top and bottom. Bevel the ends, as shown in Fig. 6.

Stand the mould upright, and push down the centre and through the bottom hole a length of ⅜in. iron piping. An old piece of gas barrel will

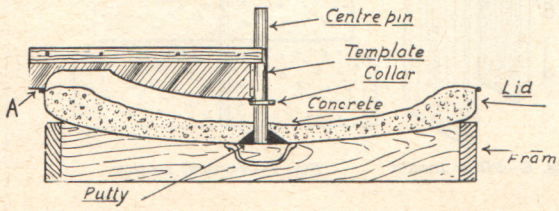


Fig. 1—Section through partly filled dustbin lid

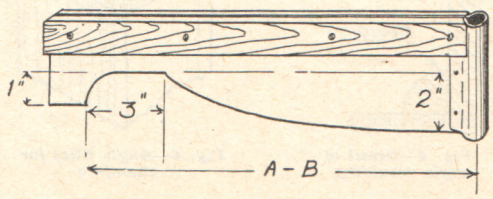


Fig. 2—The template for the top shape

suit excellently. Arrange the tube truly central, and cut long enough to extend below the bottom 8ins. and 2ins. above the top.

Ram Down

Fill with concrete, ramming down each shovelful with a piece of broomstick so as to fill the mould completely, and before leaving it to set make sure the iron tube is central.

The upper portion of the base is moulded in a box like the lower portion, but 8½ins. sq. this time. Probably the wood used for the lower mould can be utilised for the upper by cutting it down in size. The bath portion can now be finished.

Make a Template

For this job a template must be made to the shape proposed. Fig. 2 shows the template, cut from zinc. The distance A-B is just half the diameter of the dustbin lid. Allow enough to bend round the centre rod or pin, and stiffen by nailing it between two strips of wood.

A wooden collar should be glued to the pin, so when the template is in position and level, the tip A will nearly touch the edge of the lid. Fig. 1 shows a section of the lid partly filled with concrete and with the template in position ready for the final shaping.

Make up a cement mortar of equal parts of sand and cement and fill the mould, working the template round until the shape is satisfactory, then leave for a few days until the cement is hard.

All parts being ready they can be cemented together. Knock out the dowel rods in the base parts. Lay the lower base in position first then apply a ¼in. layer of cement mortar to the underside of the upper base and fix on top. Keep the central holes in line.

Putting Together

Take the pillar and cement the bottom of it. Fill the holes in the base with cement, push the iron rod of the pillar into the holes and tap the holes and tap the pillar until it stands level. Now trowel off the surplus mortar and smooth the joints.

Turn the table part over and fill the hollow, left by the putty, with mortar also put a layer of mortar on top of the pillar. The open ends of the iron rod, by the way, should be plugged with wood.

Finishing Jobs

Now lay the table in place and fill the hole in the centre of the basin with cement. Make sure the top is quite level, then leave the whole for several days until the cement is quite hard. A vertical section of the bird bath, showing the relative position of the different parts is illustrated in Fig. 7.

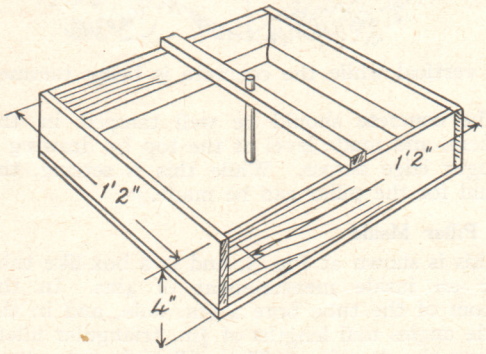


Fig. 3—Box mould for base

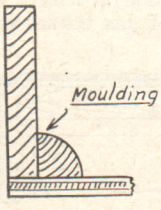


Fig. 4—Detail of angle moulding

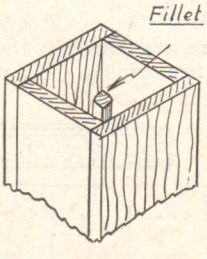


Fig. 6—Angle fillet for chamfers

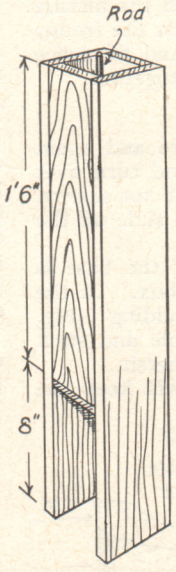


Fig. 5—Pillar mould

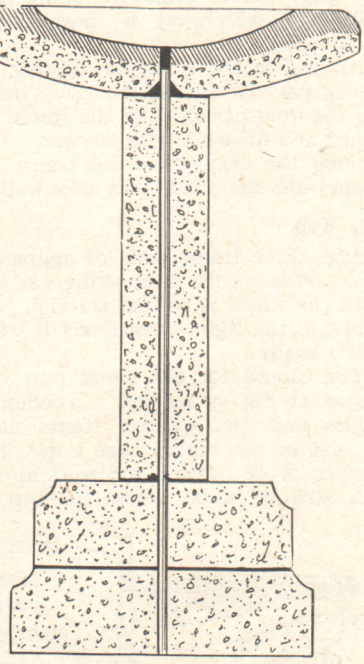


Fig. 7—Vertical section

HOW TO MAKE GASLIGHT PRINTS

AFTER mastering film development the making of prints should be tried. Positives, i.e. finished pictures, are produced from negatives by several processes, but one of the simplest is by the use of " gaslight paper."

This can be bought in 6d. and 1/- packets in the standard sizes, or bigger quantities can be obtained. In appearance it is just like rectangles of ordinary white paper, but while one side is plain the other is covered with a sensitized preparation.

A print is made by placing a sheet of this paper behind the negative and exposing to a light for a few seconds. The exposure makes no apparent alteration to the paper but when placed in a developing solution the picture almost immediately appears. A fixing bath follows, after which the print is washed and dried.

Only three dishes are needed for the production of a batch of gaslight prints. They are for the developer, water, and fixing solution. A printing frame is also required, and of course, the paper.

The paper is made, roughly, in three grades (1) vigorous, for thin negatives (2) ordinary, for normal negatives, and (3) soft, for very contrasty negatives. Of surfaces there are also three broad classes, matt, (i.e. rough) semi-matt and glossy, and it is a matter of personal choice which is used. Semi-matt and glossy surfaces are the most popular for snaps.

The Developer

The developer is " M.Q." as employed for films, and obtainable from the chemists in threepenny packets. Whereas the powders are dissolved in 10 ounces of water in the case of films, for gaslight printing four ounces of water only is used. Hyposulphite of soda (generally known as " hypo ") fixes the prints, and is made into a solution of roughly ten ounces of water to one ounce of the crystals.

Whatever you do, no hypo must get into the developing dish or the developer will be spoilt.

Paper and Light

Gaslight paper is not very sensitive to light and so can be worked in an ordinary room with the light on, provided that the direct rays do not fall on the surface during developing, inserting in the frame, etc.

To ensure this safety while developing, arrange the dishes behind a barrier so a definite shadow is thrown upon them. An old card game placed on end will do excellently for the purpose as shown in the drawing.

It is a good idea to have a place for keeping the negatives and paper, and also for loading, well away from the dishes, in some other part of the room. This prevents accidental splashing.

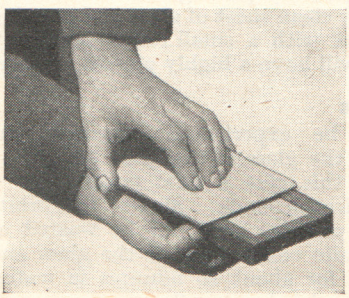
Load with your back to the light so the paper is in the shadow of your body.

The Process

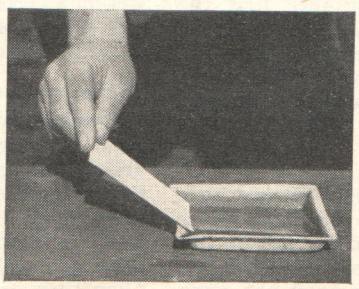
All being in readiness now proceed as follows :— Place the negative in the frame with the smooth side down ; that is, emulsion side up. If you are using films see the glass in the frame is quite clean, otherwise unsightly white marks will appear in the prints. If the printing is from glass negatives, clean the glass side well.

Now take a sheet of gaslight paper and place sensitive side down on the negative and clip in the back.

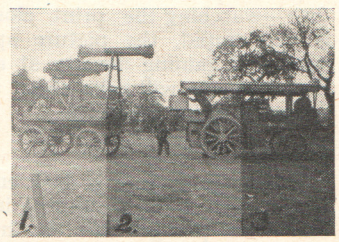
Bring the frame to the light and hold it about 12 inches away, make an exposure. It is practically impossible to give definite rules about this exposure, as it varies according to the strength of



Mark the frame in thirds while exposing



Slip into the developer like this



A test print—(1) is under and (3) is over exposure—whilst (2) is about correct

the light, density of negative and actual distance from the light at which the frame is held.

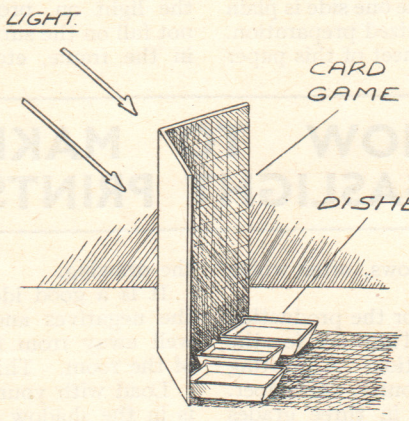
Once you have got the idea of exposure times, however, little trouble will be experienced in the future. Always work at exactly the same distance from the light and make your batches on different evenings, from the same lamp. This means that the density of the negatives will be the only thing that will vary.

Exposure Times

Exposures usually range between three and twelve seconds, but to get some idea at your first attempt, take a piece of card and cover about two thirds of the frame, thus exposing about one third of the negative only (see illustration). Give this four seconds, and pull the card back, exposing another third of the negative. Give four again, move the card right away exposing the last third and give a further four seconds.

Thus, the picture is composed of three strips, the first having 12 seconds exposure, the next eight seconds and the last four seconds. Upon developing for the standard time as given in the instructions (found in the packet) these three strips will come up to varying degrees of clearness and density and it will be easy to see which is correct or nearest correct.

Probably the absolutely correct exposure lies between two of the test times. If the negative is very thin two seconds, four seconds, and six will be enough to test with.



A piece of card stood to shade direct light on the dishes

Make the exposure by a clock that marks seconds as this means exactly the same exposures can be given again, or if a little increase is needed it can be added with accuracy.

Developing

Having exposed the paper, bring it over to the developer. Take it out in the shadow of your own body, and slip it edgeways into and well under the surface of the solution as shown. This immersion must be done quickly otherwise unequal development will result.

Once immersed, rub the surface gently with finger to prevent air bubbles and then rock the dish—watching the print closely. Development is very rapid, the picture appearing almost at once and gaining density at a fairly high speed. Development will take about 1 minute, but some papers require much less.

Washing

When the picture is dark enough, lift out by a corner, slip it for a moment into the clean water and then plunge into the hypo. Once in the fixer the print will no longer be affected by light.

As we say, hypo and developer must not come together and to this end the right hand only is used for developing and the left for dealing with the prints in the hypo. Thus a print is taken from the developer with the right hand, slipped into the water and immediately picked out by the left hand and plunged into the hypo. All through the same hand must be kept for the same solution.

It is a good idea to use forceps for lifting and moving the prints about. This keeps the hands quite dry.

If the print rushes up in the developer and blackens in, exposure has been too long and must be shortened. On the other hand if the picture is a long time in appearing and does not after a fairly long time in the developer reach any density, the exposure has been too short.

The Fixing

Fixing should take about 10 minutes but the print can be brought near a light and examined quickly after about two minutes. Stains are due to (1) paper not being fully immersed (2) too long development or (3) over-worked developer. It is false economy to try and get too much out of the solution. It is cheap compared with the paper and once a dropping-off in colour is observed it is best to mix new.

Some papers work better, but a little slower, with a few drops of 10% solution of potassium bromide added to the developer and this should be tried if stains come with fresh solution.

Having fixed the prints well, put them to wash for one hour. To do this thoroughly they must not lie together, but should be on the move as water from the tap flows in.

Drying Prints

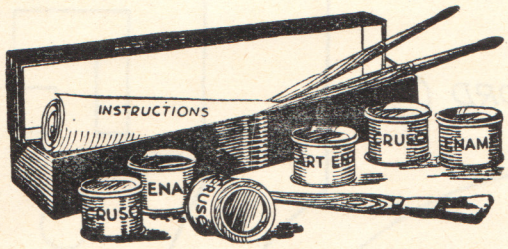
To dry, lay the prints out on a sheet of blotting paper face up (after wiping away surplus water), and let the rest of the moisture evaporate naturally. Prints curl this way but may be straightened by pulling each one under a straight-edge or steel ruler face down on some smooth surface.

If the paper is glossy the pictures may be given an extra glaze by placing face down while wet on a perfectly clean sheet of glass and pressing into close contact with a small roller (squeegee). When dry they will have a highly glossed surface.

To Prevent Sticking

Trouble will be experienced through the print sticking if the glass is the least bit greasy and to prevent this give a final polish with a little powdered french chalk. Should the prints stick badly the pictures need not be wasted as they come off quite easily again if the glass and print are soaked for about 10 minutes in water. They then can be dried naturally.

Get this HOME Painting Outfit



Every handyman needs this Outfit. With it you can paint on wood, glass, leather, pottery, etc. — a delightful and profitable hobby. Complete with 6 tins of enamel. 3 brushes and instructions as shown.

1/3 *Post 3d.*

HOBBIES LIMITED, DEREHAM

WE PUT YOU INTO THE 'Big Money' Opportunity CLASS

FOR CLUBHOLDERS

We can help you to make £2–3 a week extra. All you need do is to become a John England Trust Clubholder.

John England supply on the easiest possible payment terms, from 1/- weekly, high quality goods that sell themselves, as they afford a saving of 5/- in the £.

Delivery on payment of first subscription. Carrage paid. No drawing for chances. No late turns. Members are waiting to join.

EVERY TURN IS FIRST TURN

We want you to share in our success. Get out of the rut and earn big money. You can start a John England Trust Club with as few as five 1/- shares.

The coupon below will bring you full particulars of this wonderful proposition. Post to-day in unsealed ½d. stamped envelope to the address below.

JOHN ENGLAND'S TRUST CLUB

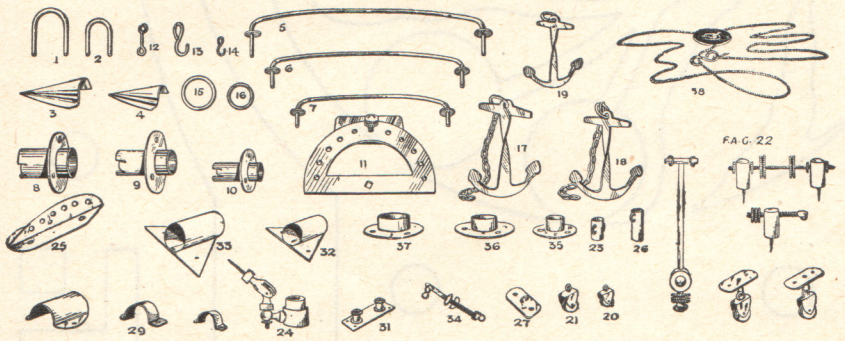
Reading Lane, Hackney, London, E.8

NAME.....

ADDRESS.....

.....HB4

MODEL YACHT FITTINGS



If you are making your own model yacht, these are the fittings you need. They are nicely made and finished. Illustrated one quarter actual size.

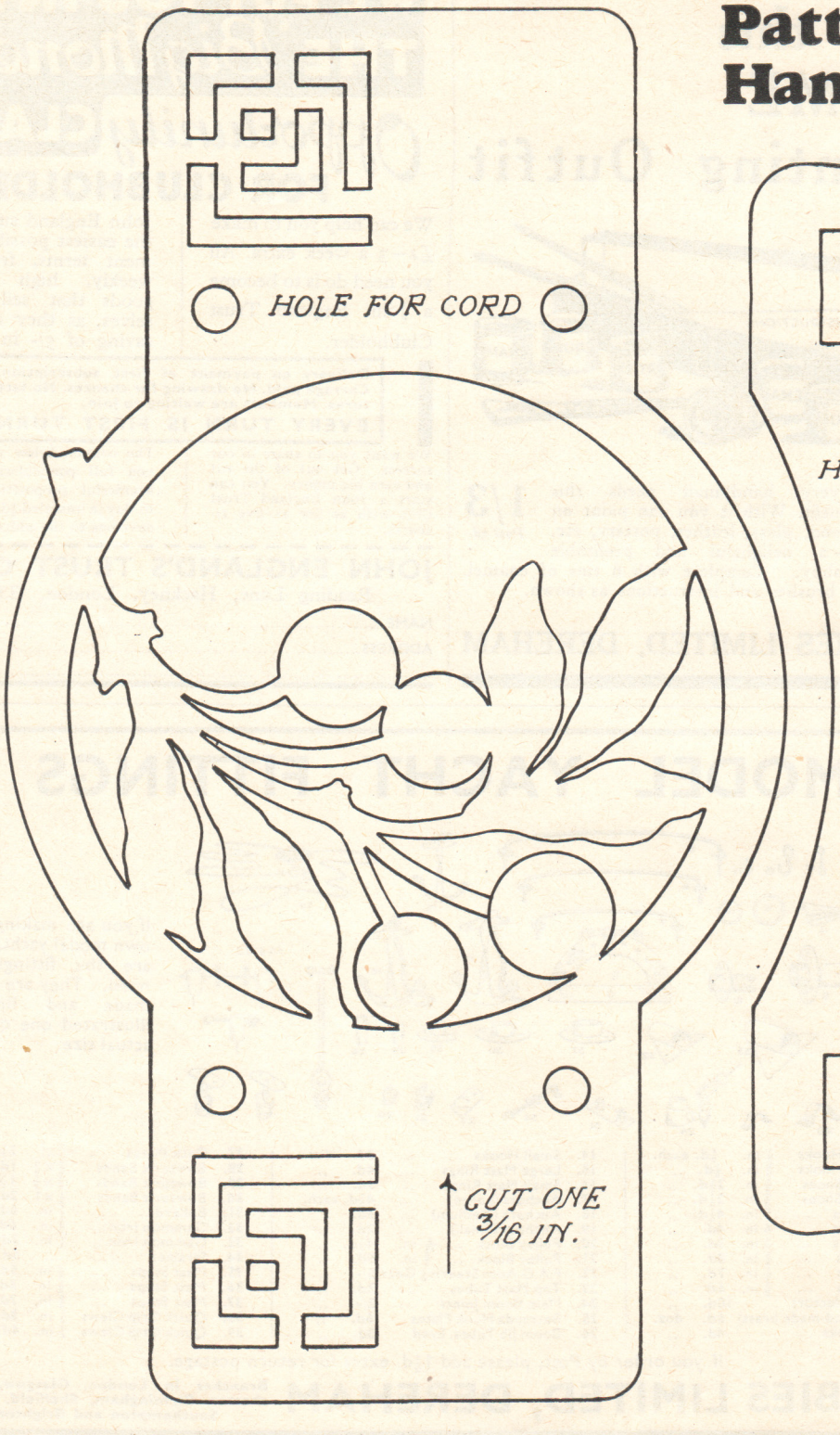
1.	Bowsprit Hooks	1/16 in.	½d.	each.	14.	Small Hooks	3d.	doz.	27.	Deck Plates	2½d.	each.
2.	Bowsprit Hooks	1/8 in.	½d.	,,	15.	Large Mast Rings ...	4d.	,,	28.	Bowsprit Bands 3/16 × 3/4	1d.	,,
3.	Bowsprit Shoes	1/16 in.	2½d.	,,	16.	Small Mast Rings ...	3d.	,,	29.	Bowsprit Bands 3/16 × 1/2	1½d.	,,
4.	Bowsprit Shoes	3/16 in.	2½d.	,,	17.	Anchors (Large) ...	4½d.	each.	30.	Bowsprit Bands 1/16 × 1	2d.	,,
5.	Sail Horses ...	5 in.	4½d.	,,	18.	Anchors (Medium) ...	3d.	,,	31.	Bollard... ...	1/16 in.	6d. ,,
6.	Sail Horses ...	4 in.	4d.	,,	19.	Anchors (Small) ...	2d.	,,	32.	Gammon Iron...	3/16 in.	6d. ,,
7.	Sail Horses ...	3 in.	3d.	,,	20.	Pulley Block ...	1/16 in.	4½d. ,,	33.	Gammon Iron...	1/8 in.	7d. ,,
8.	Mast Steps ...	3/16 in.	8d.	,,	21.	Pulley Block ...	3/8 in.	5d. ,,	34.	Strainer		6d. ,,
9.	Mast Steps ...	1/8 in.	7d.	,,	22.	F.A.G. Auto Steering Gear		5/- ,,	35.	Mast Steps ...	3/16 in.	5d. ,,
10.	Mast Steps ...	1/16 in.	6d.	,,	23.	Top Mast Tubes ...		3d. ,,	36.	Mast Steps ...	1/8 in.	6d. ,,
11.	Course Selectors		10d.	,,	24.	Main Boom Joints ...		2/- ,,	37.	Mast Steps ...	1/16 in.	7d. ,,
12.	Clews (hand-made brass)		6d.	doz.	25.	Bermuda Hook Plates		6d. ,,	38.	Quick Grip Clews	1/4 in.	3d. ,,
13.	Large Hooks ...		4d.	,,	26.	Boom Jib Tubes, Eyed		3d. ,,	39.	Quick Grip Clews	3/4 in.	4d. ,,

If you order by Post, please add 1½d. extra for return postage.

HOBBIES LIMITED, DEREHAM

Branches in London, Glasgow, Manchester, Birmingham, Sheffield, Leeds, Southampton and Brighton.

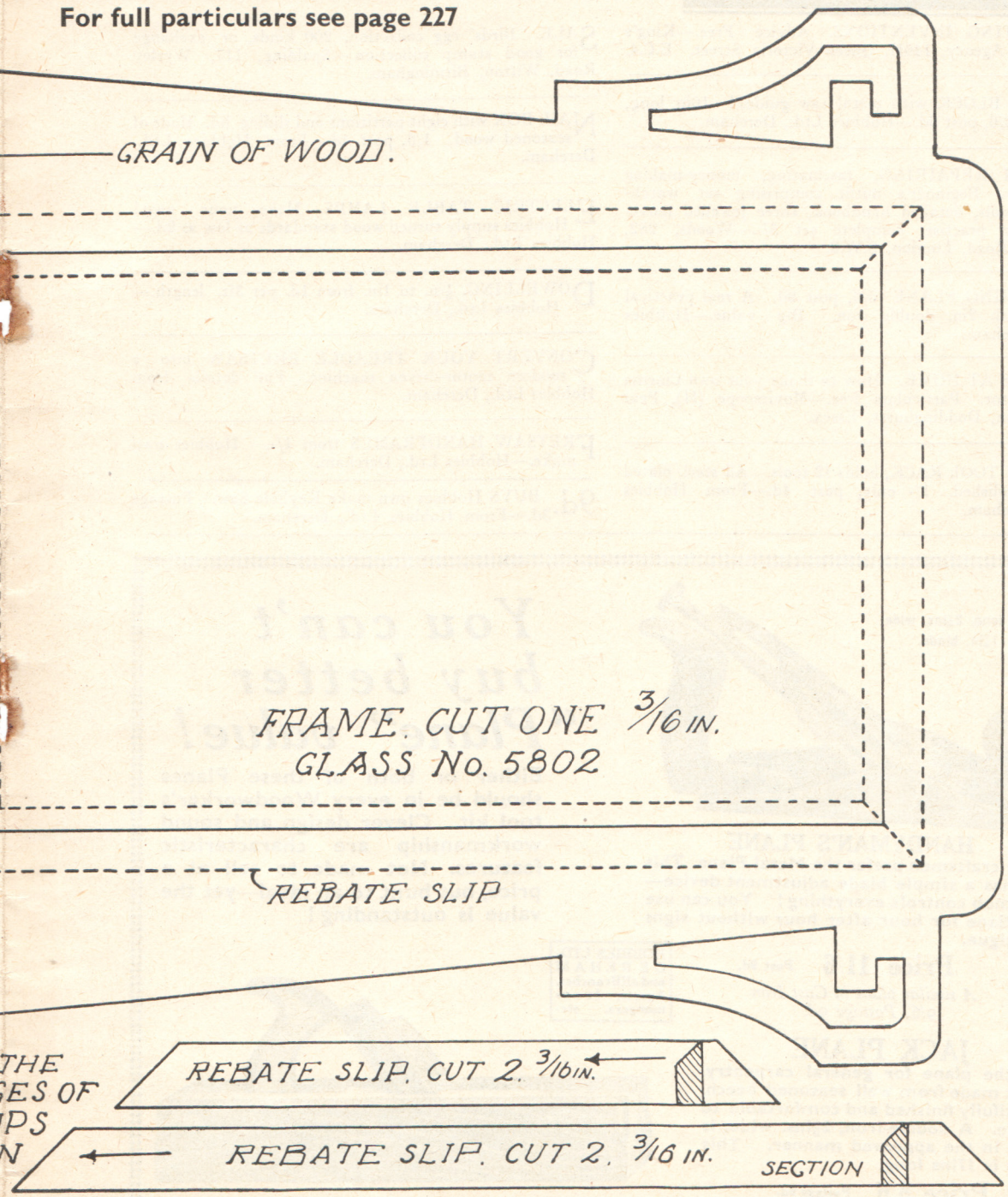
Patterns fo
Hanging Po



r making a Novel
ost Card Frame

Design
No. 2120

For full particulars see page 227



MISCELLANEOUS ADVERTISEMENTS

To sell anything except fretwork goods or those shown in Hobbies Handbook. The advertisements are inserted at the rate of 2d. per word prepaid. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Orders and Stamps must accompany the order. They will be inserted in the earliest issue.

PATENTING INVENTIONS. Advice Free.—King's Patent Agency, 146H, Queen Victoria Street, E.C.4.

MITRE BLOCK with metal saw guides! 10in. long, price 2/6, post 6d.—Hobbies Ltd., Dereham.

WATCH REPAIRING, fascinating, money-making hobby. Beginner's outfit comprising set watchmaker's tools, detailed handbook, three jewelled movements for practise, complete set 5/-.—Woods, 282, Clapham Road, London, S.W.9.

SMOOTHING PLANE 5/6, post 9d. A real practical tool with 2in. double iron. Big value.—Hobbies Ltd., Dereham.

MOVIES AT HOME. How to make your own Cinema Projector. Particulars free.—Moviescope (H), Pear Tree Green, Doddinghurst, Essex.

HANDY TOOL RACK, holds 12 tools. All steel, plated and polished. 1/- only, post 4d.—From Hobbies Ltd., Dereham.

SALE. Birds' egg collection, 200 kinds, or exchange for good stamp collection.—Spalding, 117, Wyrley Road, Witton, Birmingham.

NAIL BOX with eight partitions and sliding lid. Made of seasoned wood. 1/6, post 4d.—From Hobbies Ltd. Dereham.

ELECTRIC TABLE LAMPS. Make your own! Hobbies supply turned wood standards as low as 9d.—Hobbies Ltd., Dereham.

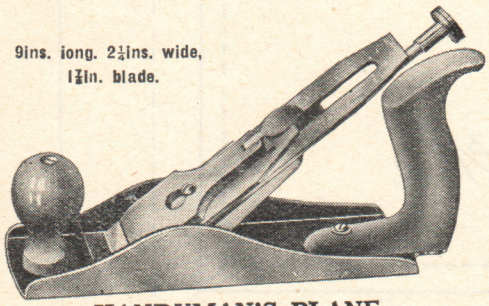
DOWELLING, ⅛in. to 1in. from 1d. per 3ft. length.—Hobbies Ltd., Dereham.

CONVERT YOUR TREADLE FRETSAW into a modern motor-driven machine. Full details from Hobbies Ltd., Dereham.

FRETSAW HANDFRAMES from 1/-. Hobbies own make.—Hobbies Ltd., Dereham.

9d. BUYS Hobbies own make Keyhole Saw. Postage 3d.—From Hobbies Ltd., Dereham.

9ins. long. 2⅛ins. wide, 1⅞in. blade.



HANDYMAN'S PLANE

Many craftsmen prefer the Metal Plane. This one has a simple blade adjustment device—one knob controls everything! You can use this Plane for hour after hour without signs of fatigue.

Price 11/6 Post 9d.

A similar plane in Cast Iron 9/6, Postage 9d.

JACK PLANE

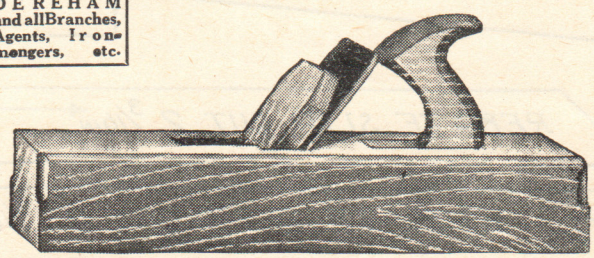
Just the plane for general carpentry. Block made from well seasoned beech, beautifully finished and comfortable to handle. A double-iron, 2⅛ins. wide, is fitted in the approved manner. This Plane is 17ins long.

Price 8/6 Postage 9d.

You can't buy better "Plane" value!

Either or both of these Planes should be in every Woodworker's tool kit. Clever design and sound workmanship are characteristic features. Not made to sell at a price, but built to an ideal—yet the value is outstanding!

HOBBIES LTD. DEREHAM and all Branches, Agents, Ironmongers, etc.



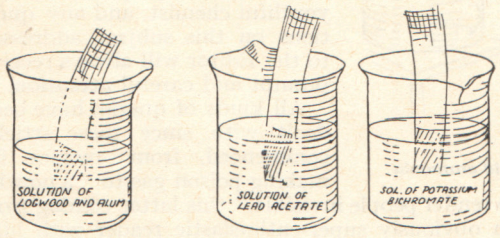
HOME CHEMISTRY

HOMELY SUBSTANCES TO MAKE

WE have dealt with many aspects of chemistry in these pages, but so far we have not devoted an entire article to the making of certain familiar substances. This interesting subject of chemistry gives an insight into the formation of a great many substances having everyday uses, and the following brief outline will be of interest and will give you ideas for a number of helpful experiments.

Soap

There is, of course, an endless variety of soaps on the market, but in spite of the fact that you can purchase tablets of almost every known scent, the basis throughout is more or less the same. Fats



The first beaker makes red dye—the other two make yellow

are formed of carbon, hydrogen and oxygen, and they can be decomposed by the action of a hydroxide.

In order to make a little soap as an experiment, place some ordinary lard, say about a pound, in an old iron pot or kettle, together with 1½ ounces of caustic soda and ½ pint of water, and boil for about 2 hours.

Then let it stand until it is cold, and add a solution of common salt in water. The effect will be that the soap is separated and will rise to the surface, where it will remain until it becomes solid.

A more simple experiment is to take some lard and some potassium hydroxide and put a teaspoonful of each into a test tube. Just boil the mixture over the flame of your Bunsen.

Bleaching Mixture

You all know that chlorine, when moist, is a powerful bleaching agent, although it is really the presence of the water that does the trick, since it forms hypochlorous acid when chlorine is dissolved in it. A very simple bleaching mixture can be made by mixing together sodium chloride and dilute acetic acid, or to put it into everyday language, common salt and vinegar.

If you should have the misfortune to get a stain on the tablecloth, just moisten the place with vinegar and rub some of this paste into it, and owing to the formation of hypochlorous acid the stain will forthwith disappear.

Gunpowder

When gunpowder is manufactured on a commercial scale, the ingredients are mixed into a paste with water and forced under great pressure into solid cakes. You can make a small supply by the much more simple method of mixing together 75 parts of potassium nitrate with 15 parts of sulphur and 10 parts of charcoal.

Rubber Cement

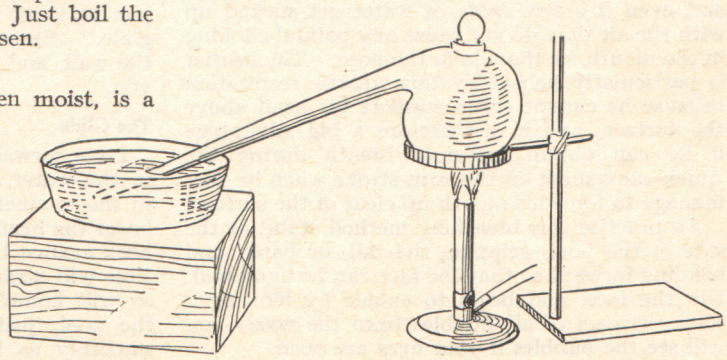
Carbon disulphide is an evil-smelling compound, but it comes in useful as an ingredient for making rubber cement, which can be used for patching knee boots, etc. Just dissolve a piece of natural rubber in some of the disulphide and your cement is ready.

Water Glass

This interesting substance, which is used largely as an egg preservative, can be made by putting a tablespoonful of silicon dioxide and a similar amount of sodium hydroxide in a beaker and pour on to it some boiling water. The result is water glass, which can be used as the basis of the fascinating "chemical tree" experiment previously described in these pages.

Sugar

Probably you've never thought of making a small portion of this everyday substance by a chemical method. It's quite easy.



How to make flash rings

All you need to do is to pour about a test tube full of water into a beaker and add half-a-dozen teaspoonfuls of starch and one quarter this amount of sodium bisulphate. Boil over your Bunsen for some 15 minutes and you will find that the starch has been converted into sugar.

Flash Rings

This is not, of course, a substance, but flash rings are very fascinating in themselves and you would no doubt like to know how to produce them.

For this experiment, fix up a retort on stand and in the retort place a little water and a few pieces of potassium hydroxide. The stem of the retort must rest in a bowl of water, and an applying heat to the retort, the gas phosphine will be given off. But the difference is that, upon these bubbles reaching the surface of the water, the gas ignites and smoke rings are produced, which float up through the air of the room.

Do not allow the phosphine to be produced too quickly, otherwise so much gas will be formed that the rings will not become separated.

Red and Yellow Dyes

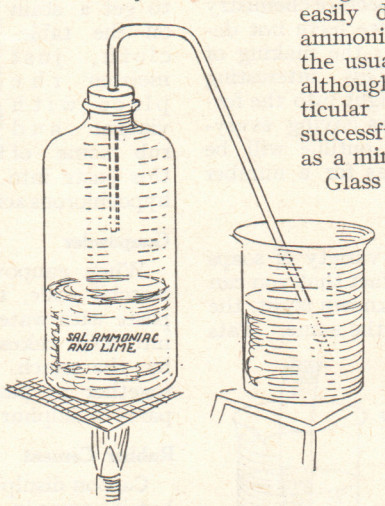
A whole chapter could be devoted to the making of dyes, but these two colours may be readily made by any amateur. For red, it is only necessary to make a strong solution of logwood and alum by pouring boiling water on them.

Any articles dipped in this liquid will be dyed crimson. In order to dye yellow, the material should be soaked in a solution of lead acetate, then taken out and dipped in a solution of potassium bichromate. The deepness of the yellow shade depends upon the amount of bichromate used in the solution.

Ammonia

Ever thought of producing this gas ? It's quite easily done by heating together sal ammoniac and lime. This is best done in the usual way by the use of your retort, although if you do not possess this particular piece of apparatus you may successfully use a stout glass bottle, such as a mineral water container.

Glass tubing should conduct the gas into a dish of water, when strong liquid ammonia will be formed.



How to make liquid ammonia

Send us your Queries

There is really no end to the number and variety of substances that may be prepared by the youthful chemist, and any questions on this subject, addressed to the Editor will always receive prompt and careful attention.

All kinds of queries have been dealt with since these articles commenced, from recipes for making poison gas to " a powder to render people invisible," this latter coming from an obviously super-enthusiastic reader with high ideals ! So roll up, you amateurs, and let's hear from you ! But please enclose a stamped addressed envelope for your reply.

Swimming—(*continued from opposite page*)

importance, and necessitates long practice, that is why it should be started from the first bathe. The swimmer does not take in breath through the nose, in the usual fashion, but through the mouth, and he often exhales through the nose with the face completely submerged.

Breathing Practice

The advantage of the mouth inhalation method is that the lungs can be filled at one quick gulp, and even if a few spots of water get sucked up with the air they do not cause any painful choking in the mouth, as they do in the nose. The learner is particularly helped by this aquatic respiration because he cannot easily support his head above the surface, and it is therefore a big advantage if he can obtain sufficient breath during the quick movement of the arm-stroke when he does manage to force his mouth up clear of the surface.

To practise this breathing method stand at the side of the pool, gripping the rail, or bank, and bending forward so that the face can be immersed. Dip the face, and begin to exhale by blowing a strong stream of air bubbles from the nose—you will see the bubbles if your eyes are open.

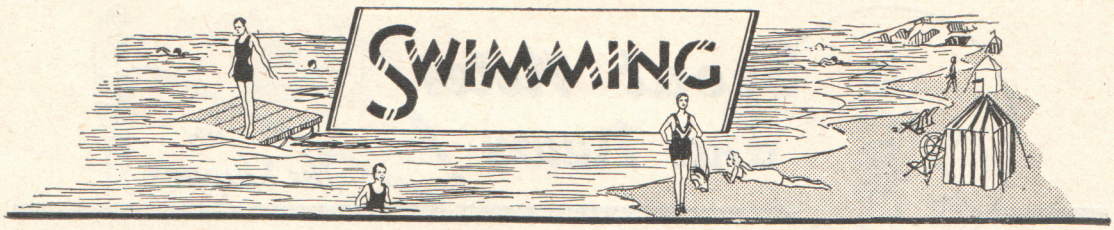
Then raise the head, by lifting it straight up, or turning it up sideways, until the mouth is clear. The lungs should be emptied just as the face comes clear. Instantly you will open the mouth wide and suck in a new supply of air. Dip the face again, and continue.

This practice will be continued day after day, perhaps for many weeks, until you can breathe comfortably and naturally in this fashion, without any feeling of strain.

In readiness for your first swimming attempts you may get used to an elementary " push and glide." Stand at the side of the pool, back to the wall, and raise a foot against the wall behind you.

The Glide

Lean forward so that chest and shoulders are in the water, and stretch the arms to the front in the manner of a diver. Take a good breath ; lower the head ; suddenly spring the second foot back against the wall by its fellow—and push off. You will straighten the body as you push, and so will launch yourself straight and flat across the pool, just on or under the surface. Glide smoothly as long as impetus lasts—then stand up. This is a most valuable exercise.



NO exercise is so universally practised as swimming. It is unrivalled for enjoyment and health value. And nowadays, when almost every town and village has its bathing place or swimming pool, there is more opportunity than ever before for learning to swim. But one does not learn to swim by chance; proficiency only comes as the result of steady, intelligently planned practice. With sufficient care and determination anyone can learn, and fairly easily too—but progress must be planned.

In this series of articles it is proposed to give a full course of swimming, of interest and help to beginners and also to those with more proficiency. There will be a specially valuable feature—after each third lesson a Test will be set, which will enable readers to prove their ability and to discover whether they have adequately mastered what has gone before.

Getting In

So get your swim suit and prepare for the first bathe. A well-fitting costume—if it is of wool don't wring it afterwards by twisting in your hands, squeeze the water out more gently; a bathing cap—if you wish to avoid the trouble of drying your hair afterwards; a dry towel of moderate size—they are all the requirements.

There is a right and a wrong way of getting into the water. The wrong is to creep hesitatingly down steps or through shallows so that the chill water rises inch by painful inch up the body. The right way is to walk straight to the water side and jump or tumble in without any waiting. Only be sure you jump in at the shallow end.

Once in, duck promptly, and then set about becoming at home in the water. Splash and jump and tumble and scramble, gradually building up confidence and ease. Try, touching your toes when breast-deep; sitting on your heels; falling over and getting up again.

Wading Games

If you have a companion you may have wading races across the pool, or even play a game of tag or wrestling. Your whole aim in this first bathe must be to get thoroughly familiar with the water, and the more freely you move about the better. That novice who just stands still, waist deep, gasping nervously, might just as well be at home.

Particularly you should give attention to the matter of getting to your feet from a full-stretch position along the water, such as you will later have when you begin to attempt swimming.

A New Feature

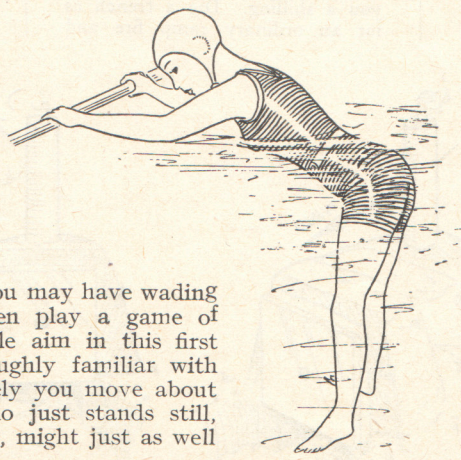
We shall be having these practical articles regularly now, and have arranged for a "test paper" to come along after each three. The reader thus checks up his progress and ability in interesting manner.

Get a friend to stand by if you like, then launch yourself forward along the water, allowing the feet to come off the bottom and the arms to stretch in front of the head—almost as if you had entered the water from a dive. Then get to the feet again.

To accomplish this you have simply to draw the knees under you; strike downward with the arms; lift the head; plant the feet widely apart—and stand up. The same method of drawing the knees under the body and striking down with both arms should be used in recovering from any sort of position, in shallow water.

Proper Progress

Of course, everything described in this Part 1 will not be mastered and finished with at the first bathe. These preliminaries should occupy about a week—say six daily bathes. Don't be impatient about beginning actual swimming; if the foundation is well laid, you will build much more quickly and surely afterwards. Naturally, if you are already accustomed to the water, you can go ahead with real swimming sooner.



How to stand for practice in breathing as described

There are two other things to be tackled right at the outset—opening the eyes under water, and the swimmer's method of breathing.

The first of these is not of great importance, but it adds a good deal to confidence. Whenever you duck your head make a habit of opening the eyes, the practice will be of considerable value later on. At first the cool water on your eyeballs will feel a little strange, but get used to it. Providing the water is clean, your eyes will be benefited.

The second thing—aquatic respiration—is of great

(*Continued on opposite page*)

Competition Results

I ALWAYS thought Scouts were good at spotting errors, but the spelling mistakes competition got you groggy. Of the host of entries only three competitors found the seventeen errors. The first correct solution opened was that of. John Robert Bond of Lune Street, Lancaster, of the 7th Lancaster Troop. Consolation prizes have been sent to the other two who were correct.

Camping Hints

BEFORE you start your dinner, see there is some water on the fire for washing up so that at the end of the meal you will have some hot ready. When in the country always leave things as you find them. If a gate was shut, close it again after you. Remember cornfields are not meant to walk in or play Scouting games.

Two light-weight blankets are warmer than one of equal weight because they hold a layer of air between them. A layer of newspapers between your groundsheet and blankets will also help to keep you warm.

Do not lace up the doors of your tent for plenty of fresh air is good for you.

Oil of lavender rubbed on to the exposed parts of the body will discourage midges and mosquitoes, etc. A shallow hole made in the ground occupied by the hip when sleeping will greatly add to the comfort of a night's rest. Remove the grease pit coverings each day and burn them, replacing with fresh ones.

B.P's Visit

I HAVE just received the news that the Chief Scout will attend a Conference in Norwich on October 24/25th of this year in connection with the Norwich Scout week.

Monthly Competition

HERE is a real Scouty competition which will help you revise a part of your tenderfoot badge and also help you to realise what a useful article the scout stave really is.

I want you to send in a list of as many uses for the Scout Stave as you can think of. Entries to Scout competition, Hobbies Weekly, Dereham, Norfolk, by Wednesday, June 10th, please. Goods to the value of 10/- for the winner, of what are considered the best practical uses.

> *"The wise, for health, on exercise depend—God never made his work for man to mend."*
>
> *Dryden*

Get that monthly competition habit!

A Biscuit Tin Oven

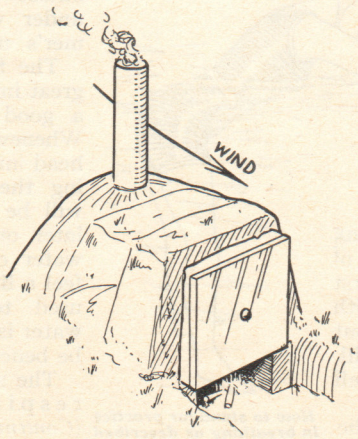
GET away from the dixie at your next camp and try a roast with a biscuit tin oven, it is very easily made and will add greatly to your camp menu.

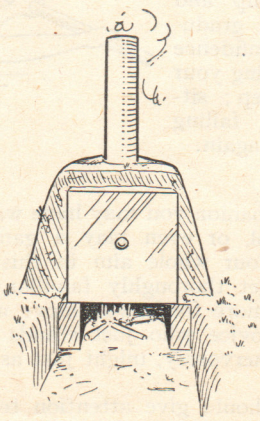
Procure from a grocer a large square biscuit tin which will cost you a shilling. Dig a trench as for an ordinary camp fire and stand your tin on two bricks at one end with the lid facing the prevailing wind.

Cover the sides, top and back of tin with clods of earth leaving an opening at the back for a draught to pass through.

See that the lid which is now the front of the oven fits easily and make a small handle of some non-conducting material

An old piece of piping will help the fire to draw better, but remember that a very small fire is needed for this type of cooking.





Overseas Competitors

AN extraordinary number of entries were sent in from overseas to the Scout word competition of the December 7th issue and they came from as far afield as New Zealand.

The winner was Tan Gan Choo, Beach Street, Penang, Strait Settlements who was optimistic enough to enclose a list of the goods he required as a prize.

Foodstuff

MUCH more is known about food poisoning than in the early days of camping and it is up to every Scout to know a few simple tests whereby he may know whether things are safe to eat or drink.

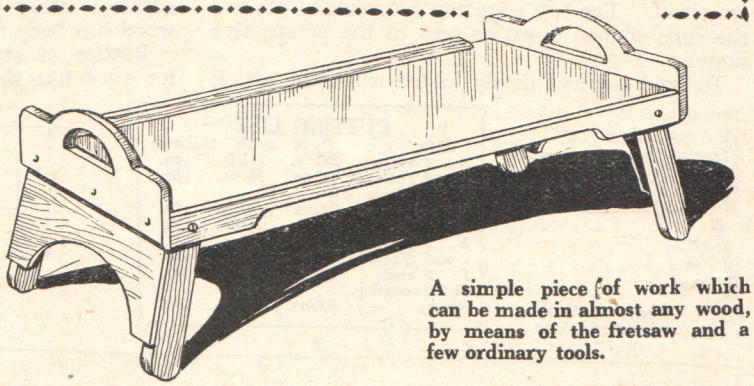
WATER.—Get some concentrated solution of permanganate of potash and add one drop to a glass of water, if the water turns slightly rose coloured it is safe for drinking, if it turns brown it should be thoroughly boiled.

MEAT. — Should be bright red in colour and firm. Beef fat should be yellow and mutton and bacon fat white. A knife run into ham should come out clean and fresh in smell.

EGGS. — Good eggs sink in cold water, stale eggs float according to staleness.

TINNED FOODS.—Do not accept a tin with a hole or a dent in it and always remove food from the tin immediately it is opened.

BED TABLE AND TRAY



A simple piece of work which can be made in almost any wood, by means of the fretsaw and a few ordinary tools.

WE are giving our workers this week details for making up the very useful combined Tray and Bed Table shown in the sketch. For those breakfasting in bed or for invalids, this article forms a firm and spacious table, and when finished with for this purpose, the legs underneath may be folded flat and the top portion used as a tray.

Such an article as this can be made up in some fancy wood like mahogany or satin walnut, or it might be made in cheaper material—deal or American whitewood. The latter are easily washed and scrubbed without injury to the surfaces.

General Construction

At Fig. 1 is shown the general construction of the underneath portion, and from this it will be seen that the whole is made up upon a framework of 1½in. by ½in. stuff.

The two side rails A are butted on and screwed to the end rails B. The whole frame is then covered with a piece of ¼in. plywood. The side rails may be lightened in appearance by cutting them down to half their width as shown in the detail Fig. 2. This drawing also shows the correct position for the holes for the pivot screws of the legs.

The countersunk screws holding down the plywood top should be spaced out not more than 3ins. apart and the heads should be well driven in and neatly finished off.

The Legs

Each pair of legs (D) is made up from 1½in. by ½in. stuff, all the ends being carefully rounded off with the fretsaw. The semi-circles should have been previously marked on the wood as a guide for the cutting.

Connecting each pair of legs is a board of plywood (E) which should be shaped simply as in Fig. 3. Each piece measures 13ins. long by 6½ins. wide and is screwed to the edges of the legs as shown in Fig. 1.

The legs fit between the side rails of the frame and have two 1in. round-headed screws run unto them to form the pivots. The position of the holes in the legs has to be carefully marked out and the centres pricked in so the screws will find their proper places when put through the holes in the side rails.

The Handle End

The screws will of course go freely through the rails and will be screwed into the legs. An enlarged diagram showing the position of legs, etc. in relation to the rails is given in Fig. 4.

The outline of one of the handle section to be screwed on the end rails is given in Fig. 5. The curved top is easily set out from this detail, while the handhole which is 4ins. long by 1½ins. wide may be sketched on the wood from the centre line given before being cut with the fretsaw.

An Edging

After marking out and cutting one complete end lay this on the second piece of wood and

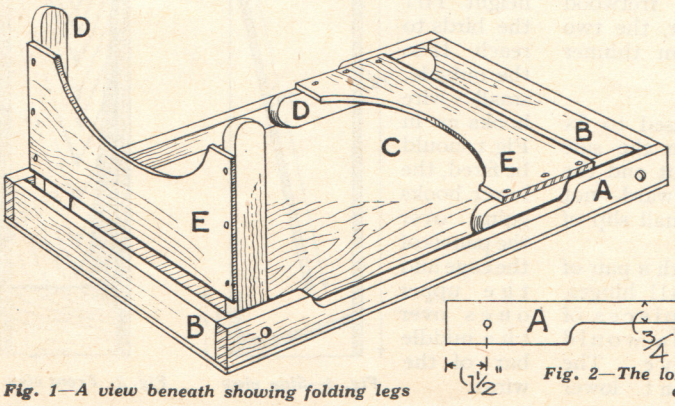


Fig. 1—A view beneath showing folding legs

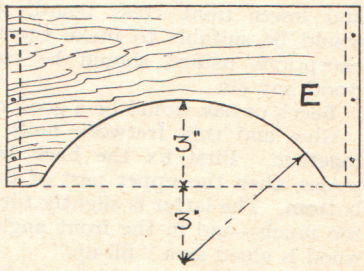


Fig. 3—The end support for the legs

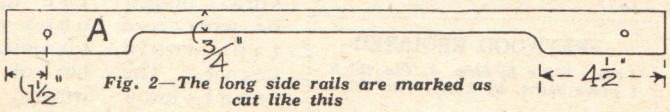


Fig. 2—The long side rails are marked as cut like this

draw round it and finish both after cutting by glasspapering each side and rounding off the sharp edges.

Along the off side of the tray, fix by means of small screws or nails, an edging fillet of ¾in. by ½in. stuff. The top edge can be rounded off and the ends shaped down as seen in the perspective sketch.

To hold the legs firmly folded when the article is used flat, four circular-cut leather or stout felt washers should be inserted between the legs and the side rails. These are threaded on the pivot screws before they are run into the rails.

All sharp edges should be taken off and all surfaces either polished or varnished if a fancy wood has been used.

Bottles of stain, polish and varnish suitable for a job like this can be obtained from Hobbies.

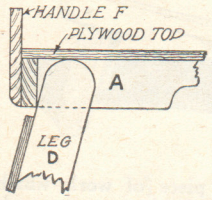


Fig. 4—A section showing leg and end portions

CUTTING LIST

Number	l'gth	w'th	thick'ss
A. 2 rails	23ins.	1½ins.	½in.
B. 2 rails	13ins.	1½ins.	½in.
C. 1 piece plywood (faced)	24ins	14ins.	¼in.
D. 4 legs	10ins.	1½ins.	½in.
E. 2 pieces plywood (faced)	13ins.	6½ins.	¼in.
F. 2 ends	14ins.	5ins.	⅝in.
G. 1 edging fillet ..	22ins.	¾in.	½in.

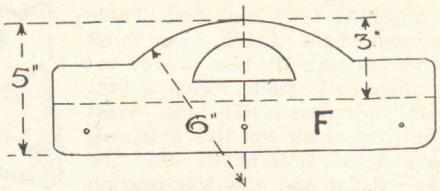
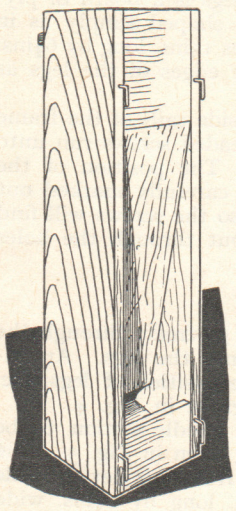


Fig. 5—The shape of the handle



A SELF-FILLING BIRD HOPPER

THIS bird hopper holds quite a good supply of seed, and automatically keeps the seed box full until the supply is exhausted. A side view and section, Fig. 1, shows the construction, and Fig. 2 is a front view.

The dimensions given will be suitable for a hopper for small or medium size birds, for pigeons to poultry and such larger birds the sizes given should be increased in proportion. For example—for a hopper for several fowls, the length could be 12ins. or more, the width 4½ins., and the height 10ins.

With the exception of the sloping front board and lower front cross board, 3/16in. fretwood would be suitable to make the hopper, the two exceptions named should be cut from thinner wood, say ⅛in.

Beech or oak would be a good choice.

Glue and thin fretwork nails are used to fix together. First fix the back between the side pieces, then the upper part of the front and the bottom. The latter is slightly tilted forward—not too much—and in the front angle a small slip of wood is glued as a "fill-up."

The lid is hinged to the front piece with a pair of small hinges, or pieces of tape would serve. The front lower piece can now be glued across, and the sloping board fixed.

The exact slope of this is not critical, but it is as well to make it a tight fit between the sides and test it before gluing permanently. The testing should be done with the actual seeds to be used.

The angle shown in the drawing will be about right for small birds, but for medium size birds the board should be sloped back as far as can be without the seeds "packing," to leave sufficient room for the birds to get at the seeds.

If the hopper is to stand inside the cage it should be hung to the wall at a convenient height for the birds to reach. If to the outside, small wire hooks as in Fig. 1 should be fixed, the lower hooks going over the panels of the cage and the upper ones over the middle bar of the wires.

FRETWOOD REQUIRED

1 piece 10ins by 6ins 3/16in. thick.
1 piece 8½ins. by 2ins. ⅛in. thick.

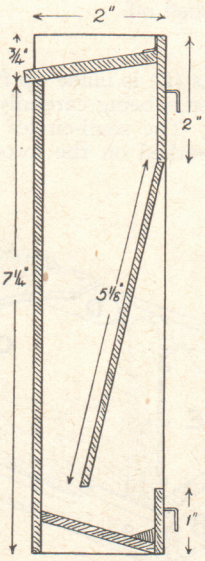


Fig. 1—Side view

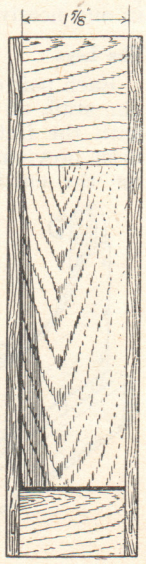


Fig. 2—Front view

A FLYING MODEL MONOPLANE

Continued from our issue of last week

WE dealt in our previous article with the initial construction of the framework of a strong flying model of the modern type monoplane. The list of materials was also given in our last article.

A piece of 1/16in. balsa sheet is cut and glued so that it butts against the end rib and the projecting spar end. When dry, this should be carved to curve down to the wing tip as shewn in Fig. 3. The other half of the wing is built up on the reverse side of the drawing.

To assemble the whole wing, cement the halves into position in the centre section so that the trailing edges butt against the rear of the centre ribs at right angles.

The Wing Tips

Block up the wing tips to make sure that they are raised just 1½ins. and then glue to each side of the spars between the centre ribs a piece of 1/16in. sheet balsa.

A triangular gusset should be glued in the inner corners of the trailing edges to strengthen these points. Place the centre section under a weight and allow the assembly to dry.

Then glue small hooks made of 20-gauge wire to take the rubber bands, into the front and rear of the centre section.

The wing is covered with Japanese tissue, the bottom surfaces of each half being covered first, then the top, and finally the centre section. Two coats of clear dope are applied after spraying with water and drying.

It is advisable to dope each half separately and allow it to dry weighted down to avoid warping.

Tail plane

The tail plane is made entirely of 3/16in. by 1/16in. balsa, with 1/16in. sheet balsa for the tips. After cutting the leading and trailing edges, ribs, spar and tips.

Cut slots in the top and bottom of the spar and ribs respectively, to form halved joints, where they intersect. Pieces are also cut away from the ends of the ribs as shewn, to take the leading and trailing edges.

The unit is built over a full size drawing, and when dry, the ribs are glasspapered down towards the leading and trailing edges.

Rudder

This is built up in a similar manner around a spar of 1/16in. birch. The ribs are drilled and threaded onto the spar, a square hole being obtained by squeezing the rib between the fingers at this point and gently pushing home the square shank of a fretwork drill.

The ends of the ribs are slotted to a depth of 3/16in. to take the leading and trailing edges. A wire saddle is cemented into position so that it fits snugly over the fuselage at former No. 11.

A gusset is glued at this point to strengthen the joint. The tail plane and rudder are covered with Japanese tissue, damped, and given one coat of dope only.

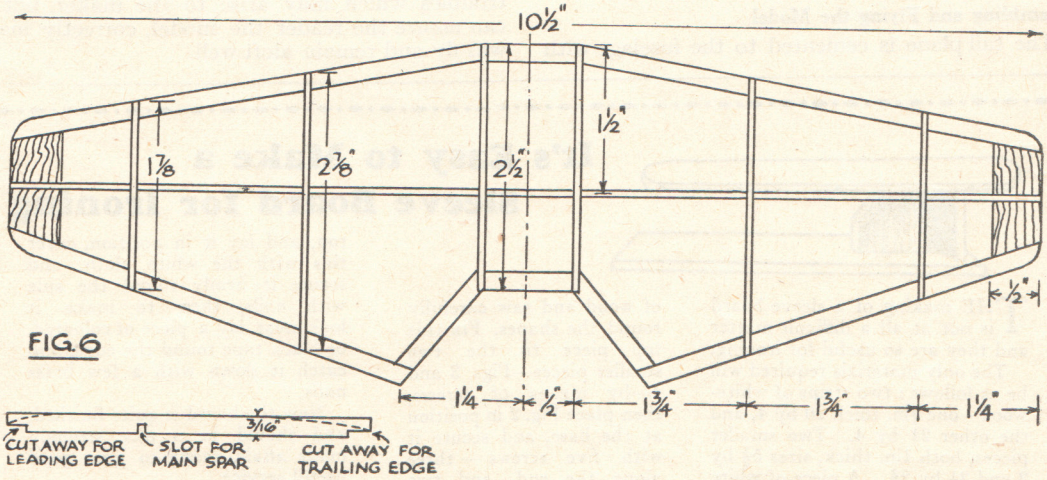


FIG. 6

Nose Piece

This is made of a piece of wood ¼in. thick, the same size as the nose former. A piece of ⅛in. wood is glued to the back to fit accurately into the opening at the front. A piece of brass tubing to take an 18-gauge propeller shaft is used as a bearing.

The shaft is bent round at one end to form a

hook to take the rubber, and pushed through the nose piece from the back. A cup washer or glass bead is then slipped over the end of the shaft, followed by the propeller.

The front end of the shaft is then bent back on itself and forced into a hole drilled in the hub of the propeller. Alternatively, a free wheel device may be incorporated to prolong the glide.

Propeller and Motor

This is cut from a block of satin walnut, ½in. thick, 9ins. in diameter and ⅞in. at the widest part of the blade. The motor consists of 4 strands, each 20ins. long, of ¼in. by 1/32in. strip rubber.

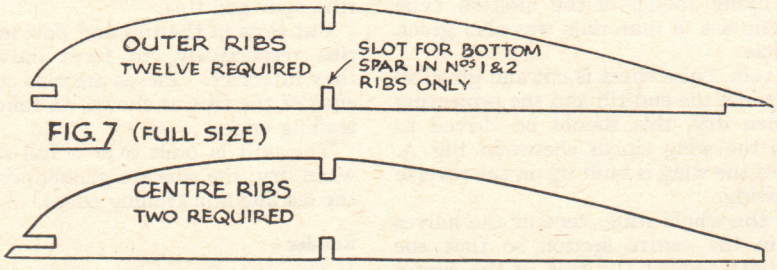


FIG. 7 (FULL SIZE)

Undercarriage

This is made of 20 gauge piano wire, in three pieces. The rear legs and crosspiece are made in one piece, to which the front legs are soldered where shewn.

It will be found most simple to slip the legs into the fuselage and bind the joints to be soldered with fine florist's wire.

The wheels are 1/16in. three-ply, 1½in. diameter, into the centres of which 3/16in. lengths of brass tubing are pushed and glued. The projecting ends of the axles are turned up slightly with small pliers.

Assembling and Flying the Model

The tail plane is cemented to the fuselage with the leading edge just over No. 11 former. The trailing edge is raised 1/16in. to give a negative incidence by means of a small block of balsa glued over the stern post.

The rudder is then slipped into position, the wire saddle being held by a rubber band passed under the fuselage.

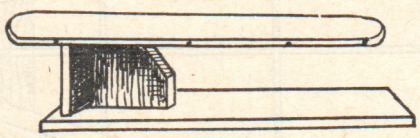
A small fillet of balsa is cemented to the fin just below the projecting ends of the longerons to prevent the rudder from sliding up and down in the slot. The mainplane is also held in place by rubber bands.

Adjust the mainplane so that the model balances on the main spar. Launch it slightly downwards into the wind on a fairly calm day for testing purposes, and slide the mainplane backwards or forwards until a consistent steady glide is obtained.

The power may then be gradually increased to a maximum of about 500 turns with the rubber well lubricated, when the model should climb steeply without stalling.

The downthrust may be varied very slightly with thin slips of balsa until the most efficient angle is reached.

We shall be pleased to endeavour to deal with troubles which may arise to the maker, but we can assure the reader the model, correctly made, will fly and remain aloft well.



It's Easy to Make a Sleeve Board for Ironing

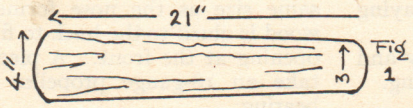
THE making of a sleeve board is not at all a difficult matter and they are so useful for ironing.

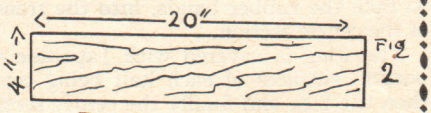
The only materials required will be as follows : two strips of white-wood—one ⅞in. thick 20 by 4, and the other 21 by 4. Two smaller pieces, both 1in. thick, sizes 5½ by 3 and 3½ by 2¾. A piece of white material to cover the top of the board with flat cotton wool padding, screws and nails.

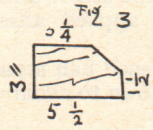
Begin by cutting out all the pieces as shown in the diagram. Use a compass or marking out the rounded ends on the longer piece of wood and saw carefully round the shapes. Fix this top piece to the two smaller pieces—Figs. 3 and 4—by means of screws, then place Fig. 2 in position at the base, and secure it with five screws — three along the end, and two down the middle, this will hold everything together very securely.

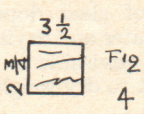
Now cut a piece of flat wadding to shape for the top, and lay it in position, cover this with the white cloth, and secure it firmly round the side with nails, then to make it look neat, lay a piece of coloured, or black tape round the edge, and catch it down with a few brass nails.

Now the board is quite finished, and should be a nice strongly made affair, ready to give good useful service.









From a User .....

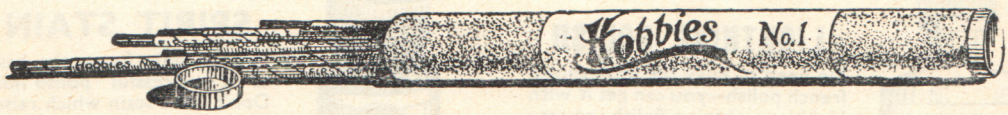
Just one of many expressions of appreciation we receive from users of Hobbies Fretsaws. Be guided by the thousands of craftsmen the world over, who know from experience that for strength, sharpness and long life, Hobbies Fretsaws are unequalled. Remember.....Hobbies Fretsaws are the best money can buy.

BLUE LABEL	YELLOW LABEL	SILVER LABEL
4½D.	6D.	9D.
Per Doz.	Per Doz.	Per Doz.
4/- Gross.	5/6 Gross.	8/6 Gross.

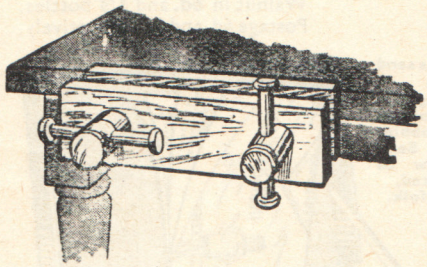
Post 1½d. extra from Hobbies Ltd., Dereham

ALL WITH ONE BLADE!

Mr. E. V. Hughes, Co. Armagh, writes:—"I have just completed the model of the Lord Mayor's Coach, a smoker's table, model altar, pipe rack, model aeroplane, letter rack and the 'Home Shrine'—all with one blade, which is still intact. I think this is a pretty good record for a beginner."



HOBBIES BRITISH FRETSAWS

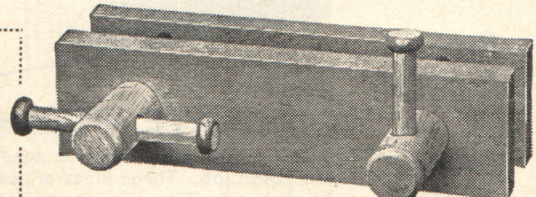


Turn your Kitchen Table into a Carpenter's Bench

A NECESSITY FOR THE HANDYMAN

Every woodworker knows the need of a vice to hold his work, and even if he does not own a carpenter's bench he can now make an excellent substitute on the kitchen table. The strong vice illustrated is fixed to any table with two screws (the holes can be just seen in the picture) through the backboard. Made throughout of strong hardwood—an absolute bargain at the price.

The vices made throughout are of hardwood and the double action screw will hold the wood absolutely tight. The whole thing can be easily fixed to a table and serves for a hundred and one jobs for the handyman.



Ask for Hobbies at any ironmongers or hardware stores.

HOBBIES BENCH VICE

12ins. Long - 2/3
15ins. Long - 3/3

Postage 6d. extra on each.

From Hobbies own branches in London, Glasgow, Manchester, Birmingham, Sheffield, Leeds, Southampton, Brighton.

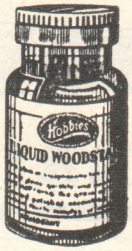
HOBBIES LTD.—DEREHAM—NORFOLK

My! That's a Lovely Polish

Make no mistake about it, a good finish is essential if you want to make the most of your work. Many a job is spoilt—or remains just commonplace—because of improper finishing. Hobbies supply all you need to solve your "finishing" problem. Stains and polishes which have proved their worth to thousands of craftsmen everywhere.

LIGHTNING POLISH

No need to envy the professional french polish—**you** can get it with Hobbies Lightning Polish—so easy—so rapid. A child can use it. In two sizes **10d.** and **1/8.** Postage 5d. Also in ½-pint bottles, **2/8** and 1 pint, **4/9** post 6d.



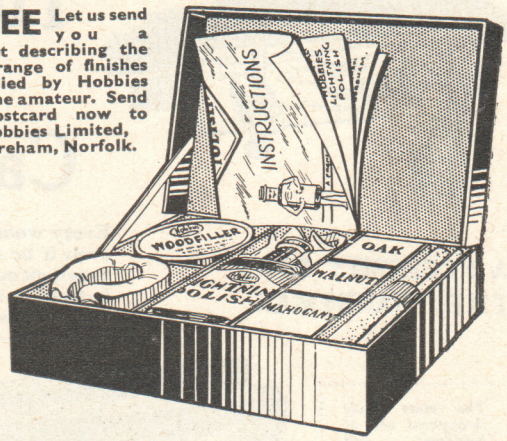
SPIRIT STAIN

A good stain forms the basis of a successful polish job. Don't use a stain which raises the grain or dries patchy. Hobbies Spirit stain soaks right down into the heart of the wood and dries quickly and evenly. Made in five colours: Mahogany, Light Oak, Fumed Oak, Jacobean Oak and Walnut in **6d.** and **1/3** bottles. Postage 4d. and 6d. respectively.

COLOUR POLISH

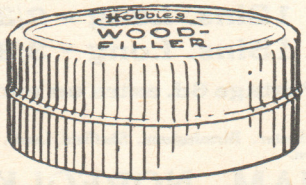
Just like Lightning Polish, but stains the wood the same time as it polishes. This is a big favourite with handymen, because it saves time. Suitable only, of course, on bare wood. Why not try a bottle and see for yourself the amazing results it gives? **1/9** per bottle, post 4d., also ½-pint bottles **3/-**, and 1 pint **5/3**, post 6d.

FREE Let us send you a leaflet describing the full range of finishes supplied by Hobbies for the amateur. Send a postcard now to Hobbies Limited, Dereham, Norfolk.



WOODFILLER

You need Woodfiller for filling the grain of wood before polishing. This is a special preparation which does its job well. In two sizes, **6d.** and **1/-**, post 4d.



Hobbies Limited

Dereham Norfolk

Branches and Agents in Principal Towns.

COMPLETE POLISH OUTFIT

Here you are—everything you need to make a first-class polish job. Three kinds of powder stain, bottle of polish, woodfiller, glasspaper, and cotton wool for the "rubber." Full instructions that anyone can understand. This outfit is put up in a useful box and comes in two sizes :—"Junior" **2/3** and "Senior" **3/6**, post 6d. The larger outfit is practically double size all round.

HOBBIES

BRANCHES AND AGENCIES. **LTD.**

Below are the addresses where Hobbies goods can be purchased. In addition, all leading stores and ironmongers stock or can obtain your requirements in fretwork and woodwork, designs, wood, turned legs, moulding, polish, etc.

HOBBIES OWN BRANCHES—

LONDON - - - 16 NEW OXFORD STREET, W.C.I.
LONDON - - - - - - 147 BISHOPSGATE, E.C.
LONDON - - - - 83 NEWINGTON BUTTS, S.E.11.
GLASGOW - - - - - - 326 ARGYLE STREET.
MANCHESTER - - - - - - 8 PICCADILLY.
BIRMINGHAM - - - - - - 9a HIGH STREET.
SHEFFIELD - - - - - 4 ST. PAUL'S PARADE.
LEEDS - - - - 10 QUEEN VICTORIA STREET.
SOUTHAMPTON - - - 25 BERNARD STREET.
BRIGHTON - - - - - - 68 LONDON ROAD.
CANADA
54 WELLINGTON STREET WEST, TORONTO.

HOBBIES AGENCIES—

Aberdeen.—Jas. Mutch, Ltd., 47 Broad Street; **Blackburn.**—Mr. H. Mercer, 68 Darwen Street; **Bradford.**—Messrs. T. Underwood & Co., 13 and 15 Manchester Road; **Cambridge.**—Mr. H. S. Driver, 28 Hills Road; **Canterbury.**—Mr. T. D. Goodman, 33 Burgate Street and 16 St. George's Street; **Cardiff.**—J. Halls (Tools) Ltd., 31 Morgan Arcade; **Croydon.**—L. H. Turtle, Ltd., 6 Crown Hill; **Dover.**—Mr. E. F. Bockham, Queen's Gardens; **Dublin.**—Mr. J. J. McQuillan, 36 Capel Street; **Dundee.**—Phins Ltd., 45 Murray Gate; **Folkestone.**—Mr. W. Allsworth, 16 & 18 Guildhall Street; **Hastings.**—Mr. W. H. Mozley, 4 York Buildings; **Leicester.**—Mr. Frank Berry, 3 Loseby Lane; **Liverpool.**—Mr. C. Lucas, 17 Houghton Street; **London.**—Messrs. H. Osman, 166 Aldersgate Street, E.C.; **Newport, Mon.**—J. Halls (Tools) Ltd., 81 High Street; **Reading.**—Mr. W. J. Sargent, 44 West Street; **Swansea.**—J. Halls (Tools) Ltd., 8 Gower Street; **York.**—Messrs. J. H. Shouksmith & Sons, 132 Micklegate.

HEAD OFFICE AND WORKS:

DEREHAM, NORFOLK

GENERAL NOTICES.

EDITORIAL.

All Editorial matter should be sent to The Editor, Hobbies Weekly, Dereham, Norfolk. If enclosed with orders or other matter for Hobbies Ltd., it should be written on a separate sheet of paper. Any matter requiring an answer must have a stamped addressed envelope enclosed.

DESIGN SHEETS.

The presentation Design Sheet is given only with current copies of Hobbies Weekly, and not with back numbers. The designs, however, can be obtained separately, from Hobbies Ltd., price 4½d., post free, or 10d. in the case of double size sheets.

ADVERTISEMENTS.

All orders and letters respecting advertisements should be addressed either to the Advertisement Manager, Hobbies, Dereham, Norfolk, or to 52 Bedford Street, Strand, London, W.C.2.

INDEXES AND BINDING CASES.

An Index for any volume is obtainable for 4½d. post free, and Binding Cases to take a complete set of 26 issues (making the volume) are supplied for 1/6, or sent post free for 1/8. The Cases are in red linen with gold blocked name on the front. The Azabook Binder, to hold 24 copies which you can fix in yourself is 3/3 (3/6 post free) including two dozen fastening staples.

BACK COPIES.

Back copies are obtainable from the Editorial address given above or from the Publisher, price 2d. a copy, plus postage

CONTRIBUTIONS.

The Editor is always pleased to consider suitable articles for these pages, which, if accepted, will be paid for at the usual rates. While every effort will be made to return unsuitable contributions (if stamps for that purpose are sent with them), the Editor does not accept any responsibility for their loss.

SUBSCRIPTION.

Hobbies will be forwarded by post to any part of the world at the following prepaid rates. Twelve months 13/-, six months 6/6, three months, 3/3. Registered for transmission by Canadian Magazine Post.

WOOD
OF ALL KINDS

If you require wood for wireless carpentry, fretwork or woodwork generally get it from Hobbies Ltd. They supply good quality stuff in all popular thicknesses, planed both sides, at keen prices. Fancy woods, decorations, mouldings, etc. astonishingly cheap and special parcels of fretwood at bargain prices.

POPULAR PARCELS

These parcels contain six feet of wood $\frac{3}{16}$ in. thick and planed both sides.

ASSORTED (6-9ins.) 3/-
BEECH (9-11ins.) .. 3/9
SYCAMORE (7-9ins.) 4/-
MAHOGANY (9-12ins.) 4/-
Postage 7d. extra on each.

MAHOGANY—OAK
SATIN WALNUT
BEECH—PLYWOOD
FANCY BEADING
MOULDING, ETC.

FREE *Call at any Hobbies Branch for our illustrated Wood List or send a card to Hobbies Limited, Dereham, Norfolk.*

Obtainable from Hobbies Branches in London, Glasgow, Manchester, Birmingham, Sheffield, Leeds, Southampton, Brighton.

HOBBIES LTD., DEREHAM, NORFOLK.

OVERSEAS GIFT VOUCHER
for Hobbies Sale Goods

This Voucher entitles anyone living outside the United Kingdom to goods value 2/6 FREE on any order over 10/- in sale prices for goods shown in Hobbies 1936 Sale List. Fill in your name with a list of gift goods required, and attach to your order. Add the number and value of the postal order, as well as your name and address

Latest date for use—July 31st, 1936

Name.....

Address.....

.....

.....

.....

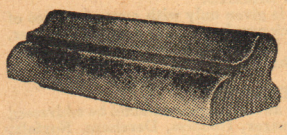
Note—Only to be used by those living Overseas.

REPLY COUPON

One of these small Coupons and a stamp for 1½d. must be attached to your letter to the Editor if you are enquiring about anything which demands an answer. Cut the Coupon out and put it in with your letter which should be addressed to The Editor HobbiesWeekly,Dereham,Norfolk.

WOODWORK REQUISITES

These Mouldings, Beadings, etc., are just the thing to add the finishing touch to any woodwork. They are finished ready to fix, supplied in any length, in popular sizes at reasonable prices.



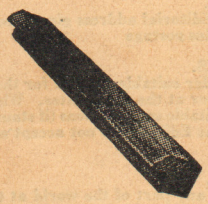
TRAY MOULDING

BEAUTIFULLY CUT AND FINISHED IN THREE WOODS. SUPPLIED SOLID AS ILLUSTRATED OR WITH ¼IN. OR ½IN. GROOVE FOR GLASS.
STATE WHICH REQUIRED.

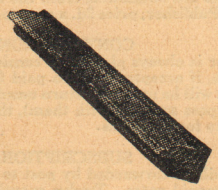
OAK	3d. per ft.	2/6 for 12 ft.
HAZEL WALNUT	2½d. per ft.	2/3 for 12 ft.
MAHOGANY	4d. per ft.	3/6 for 12 ft.

SMALL PICTURE MOULDING

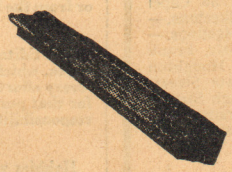
This small moulding is beautifully cut in oak and suitable for small picture frames. It is easily cut with a small tenon saw and is only ½in. wide.



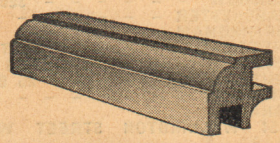
No. 6, 1½d. per t.



No. 7. 1½d. per ft.



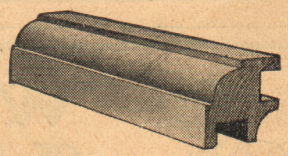
No. 8. 1½d. per ft.



CORNER MOULDING

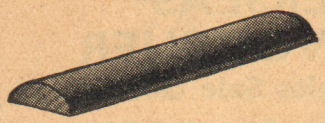
Supplied in 2ft. lengths unless otherwise requested. Box-making simplified by the use of this moulding: Grooved on two faces to take the box sides. For 3/16, ¼ or ⅜in. material. Hazel Pine is suitable wood for staining almost any shade. Well cut and finished.

Groove			Hazel Pine	In Oak Per foot.
No. 45 with 3/16 in.		...	1d.	1½d.
No. 46	,, ¼ in.	...	1½d.	2d.
No. 47	,, ⅜ in.	...	2d.	2½d.



HALF AND QUARTER BEADING

IN SATIN WALNUT, OAK OR MAHOGANY

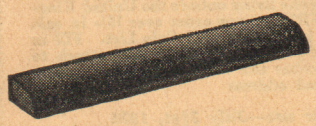


No. 34—QUARTER ROUND.

¼in.	1d. per ft.	9d. 12 ft.	5/- 100 ft.
⅜in.	1d. ,, ,,	9d. ,, ,,	5/- ,, ,,
½in.	1d. ,, ,,	10d. ,, ,,	5/3 ,, ,,

No. 35—HALF-ROUND.

¼in.	1d. per ft.	9d. 12 ft.	5/- 100 ft.
⅜in.	1d. ,, ,,	9d. ,, ,,	5/- ,, ,,
½in.	1d. ,,	10d. ,, ,,	5/3 ,, ,,

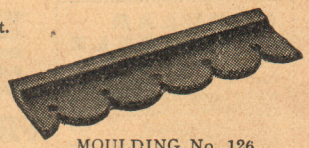


FANCY CARVED MOULDING

Suitable for decorating shelves, cabinets, boxes, wall ornaments, etc. This handsome moulding is foreign made in beech. Well cut and finished.

MOULDING No. 125.
¾in. wide. 2½d. per ft.
2/- for 12 ft. 17/6 for 100 ft.

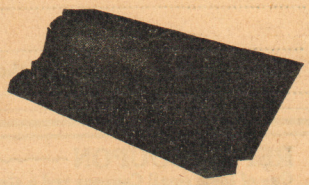
MOULDING No. 127.
11/16in. wide. 3d. per ft.
2/6 for 12 ft. 20/- for 100 ft.



MOULDING No. 126.
⅝in. wide. 2½d. per ft.
2/3 for 12 ft. 18/- for 100 ft.

A FREE BOOKLET

A fully illustrated 18-page handbook, giving price and particulars of a wide range of moulding, beading, ornaments, etc. free on application to Dereham, Norfolk.



Cornice Moulding

This is used in building the hollow-shaped lids to gramophone cabinets, wireless sets. It forms the sides in one piece to save the usual building up.

No. 43—2in. wide, ¼in. thick. Hazel Pine, 3d. per foot.

NOTE.—
Postage is extra to all the above prices.

Always give reference number when ordering.

HOBBIES LTD.

Supplied by Hobbies Ltd., Dereham, Norfolk, or their branches in London, Glasgow, Manchester, Birmingham, Leeds, Sheffield, Southampton, Brighton. Also from leading ironmongers and stores.

Printed by BALDING & MANSELL, London and Wisbech, and Published for the Proprietors, HOBBIES LTD. by HORACE MARSHALL & SON LTD., Temple House, Tallis Street, E.C.4. Sole Agents for Australia and New Zealand: Gordon & Gotch (A'sia) Ltd. For South Africa: Central News Agency Ltd. Registered for Transmission by Canadian Magazine Post.